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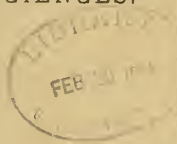
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THE
BIRMINGHAM MEDICAL REVIEW,
APRIL, 1880.

REVIEWS.

OVARIOTOMY.*

THE work of Dr. Olshausen serves to indicate the attention which has been paid to the operation of ovariectomy, and the interest which it increasingly excites. It is a common observation, that whilst our knowledge of disease generally has during the present century advanced more than in all previous ages, our acquaintance with the means of combating it is scarcely, if at all, more considerable than that possessed by our forefathers. This cannot be said, however, of ovariectomy, as a more correct diagnosis, and a more exact knowledge of the pathology of colossal ovarian growths unquestionably enable the practitioner to deal with them in a decisive manner by the aid of surgery. When we consider that the operation of ovariectomy is comparatively a recent development, we cannot fail to be surprised at the rapid progress which it has made and the degree of perfection to which it has attained. Reforms of this magnitude, however, are not generally so sudden as they at first appear; they

* Die Krankheiten der Ovarien, von Dr. Robert Olshausen ord. Professor der Gynäkologie zu Halle. The diseases of the Ovaries, by Dr. R. Olshausen. Handbuch der Frauenkrankheiten redigirt von Dr. Th. Billroth ord. Professor der Chirurgie in Wien. Sechster Abschnitt.

are invariably preceded by some foreshadowing of their approach—some travailling of genius so to speak—or some imperfect disclosure of a new truth, before the world is ready to appreciate or to receive it. Thus in regard to ovariectomy, observations were few, and experiments isolated, and these were often erroneous owing to the want of any definite aim on the part of those who made them. It is not now necessary to study the history of ovariectomy, or to defend it from the objections so persistently raised against it, or to point out the advantages which have arisen from the employment of surgical measures to remove a morbid growth irremediable by any other means; for ovariectomy is now a recognised and legitimate surgical operation. It has taken a fixed and prominent position among remedial measures, and perhaps no single operation has exerted a more extensive or powerful influence than this upon the diseases of women, or has given a stronger impulse to visceral surgery generally.

The subject of ovariectomy has been so prominently brought before the profession during the last few years, and has been so ably discussed and advocated by many distinguished operators that, even if our limits would permit such an exposition, there would be no need for more than a very general and cursory survey of its history, or for an enquiry into the details of description, modified and corrected, as they have been in many essential particulars, by the results and trials of successive operators.

It would scarcely, however, be just, either as regards the honour of our country, or the labours of an eminent contemporary surgeon if, when speaking of ovariectomy, we made no reference to the labours of our own countryman, Mr. Spencer Wells. When he took up the operation, it

was performed without any very definite principles to guide the operator in his method. It is true that the efforts of previous operators had established the feasibility of the operation, had justified recourse to it, and had shown that it was the only mode of curing patients suffering from a malady so dangerous to life. But what to do, and how best to do it, was still a problem. In this practical direction the advantage resulting from the researches and practice of Mr. Spencer Wells is inestimable. Proceeding, honestly, step by step, with rare skill, devotion, and intelligence, he so succeeded in developing the operation that he placed it upon a truly scientific basis, and so perfected it as to leave scarcely anything to be desired or required by those who follow in the path he has indicated. His large opportunities, aided by bold initiatives, have determined in the most conclusive manner the necessary steps to be taken in almost all possible contingencies so that it is scarcely possible to suggest anything in the shape of detailed improvement. Some operators have occasionally, with questionable prudence, attempted innovations which have proved useless, which have failed, and which have imperilled the lives of those subjected to mere experimental treatment. There are, however, a few points which are still the subjects of controversy, and are worthy of consideration, although even here we might well be content with the practice of Mr. Wells, as his success justly merits our confidence. Nevertheless it may be profitable to analyse the evidence in favour of or against the adoption of certain procedures, and to endeavour to determine the best method of procedure, in the hope of ensuring the perfection of this operation.

Certain opponents of ovariectomy, with a view to ridicule the operation, have urged that it neither requires

a good anatomist, nor an experienced surgeon, to undertake and complete the operation. However this may be as applied to what are termed simple cases of ovarian disease, yet in practice cases are frequently met with, which from their complex nature, and their relation with the surrounding structures, are so perplexing as to tax to the uttermost the judgment and skill of those who are most experienced in pathological anatomy and surgery. The operation is not now, as formerly, confined to a few specialists, but is undertaken by many excellent surgeons with very good results. It must be admitted, however, that, from an absence of practical experience, ordinary practitioners have not, and could not be expected to have, a complete knowledge of the varying phases which morbid ovarian growths present, or to be able to form a just conception of the difficulties likely to be met with. There are operators who, when a difficulty arises, more especially in what has been termed a surgical diagnosis, elect to clear up the doubt by making what they term an exploratory incision, but which more frequently turns out, as Dr. Olshausen states, to be, if correctly described, an unfinished operation. We protest against this method of proceeding, and sufficiently so upon this ground alone. There are cases, no doubt, in which, in the interests of the patient, an exploratory incision may be undertaken, and if it is confined to this alone, it may not be particularly prejudicial to the patient's welfare. The relation of morbid growths to the neighbouring structures, under very difficult circumstances, is now so well known to, and appreciated by the experienced operator that he has but little difficulty in deciding when an operation is justifiable,—and an exploratory incision should be limited almost exclusively to obtain this knowledge, and not employed merely with a view to determine the nature of

the disease. The extent to which this operation has been practised is so great, and the immediate consequences to the patient have been so limited, that it is often remarked that an exploratory incision can be made, and if it is found that the operation cannot be proceeded with, the wound can be closed and the patient be left scarcely any worse for the proceeding. This may be true, but such a measure is not justifiable on these grounds. The experienced ovariectomist rarely resorts to an exploratory incision for the reasons just stated; he knows that it is inconsistent with true surgery, and he is also aware that it leads to the possibility of exposing the patient to an useless operation, and one not altogether free from danger.

The most important question of the day in relation to ovariectomy is the advantage of performing the operation under the antiseptic method. The number of operators are few indeed who do not adopt this method. Undoubtedly it is difficult to prove by statistics that the use of antiseptics contributes to the success of the operation. Those operators who argue against the adoption of the plan urge that the success is due to a more exact diagnosis, increased care in the selection of the cases for operation, to greater experience of the operator, and to the vigilance with which hygienic precautions are exercised. These arguments are not of much value in deciding the question; because, with the exception of the advantage of increased experience in operating, all the other procedures have been most carefully carried out since Mr. Spencer Wells so forcibly insisted upon their observance. The advantage of operating in private houses is well known, and the cases operated upon under these conditions, when recovery has occurred, have always been attended with fewer interruptions or

complications in convalescence than when similar cases have been treated in a general hospital, and although the antiseptic method may not have been uniformly adopted, the hygienic conditions being so complete owing to the separation from noxious or harmful emanations, proves that absence of germs likely to produce an alteration in the blood which would lead to a fatal issue materially contributes to the convalescence of the patient. The septicaemia, which is the terror of the ovariologist, is almost proved to be the cause of the fatal issue of a majority of ovariectomies; this mainly arises from a decomposition of the fluid which may have collected in the peritoneal cavity, favoured by the importation of germs from without, and which are probably destroyed by the carbolic acid used in the antiseptic method. It is clear that other factors are necessary in the management of the case besides the antiseptic method to accomplish recovery. The patient must possess fair constitutional vigour, the operation must be performed with an amount of care calculated to cause the least shock to the system, and the careful watching of the process of convalescence is of primary importance. The two latter agencies are secured in a great measure by increased experience on the part of the operator. The nature of the case as to the connection of the tumour with important visceral structures, in which internal wounds caused by the separation of the adhesions are left to cicatrize, is another element of danger which no employment of the antiseptic method, however carefully managed, could compensate. The early removal of the growth, is another element to be taken into consideration, of importance, as cases are not now allowed to run any lengthened course without an attempt being made to remove them. The patients are in better condition for the operation, and the growth

being less likely to have contracted adhesions, the operation is rendered easier and safer than if the growth were allowed, as formerly, to exist for years without an operation, and if the local conditions are made worse for operation by injudicious methods of general and local treatment.

With every allowance made for care in selection, judicious surgical treatment, careful after management—conditions always insisted upon before the advent of the antiseptic method—the question is: does this method materially increase the chances of recovery of the patient operated upon? The experience of Schröder on this point is of the greatest practical importance. He treated 33 cases under the antiseptic method in the Berlin lying-in Hospital—a place notoriously bad in all its sanitary appointments—with only one death; a remarkably successful result considering the conditions under which the operations were performed. No similar success in a general hospital has been recorded. Olshausen operated 16 times with one death under the antiseptic method; while, previously, without the use of antiseptics, he operated in 40 cases with 19 deaths. Nussbaum, in 33 cases, with the employment of antiseptics, had eight deaths; while, previously, without them, in 84 operations, he had 38 deaths. Hegar operated 15 times, employing a chlorinated solution, of course without the spray, and had no death. The experience of Mr. Spencer Wells, detailed in a letter published in the *British Medical Journal* for January 10th, 1880, shews that in private practice, before adopting the antiseptic treatment, he had 84 cases with 21 deaths. Since he has employed antiseptics he has had 84 cases with only six deaths, and he adds, “if any deductions from death rates after operation can be trustworthy I can hardly

conceive any to be more trustworthy than the results of the same number of cases of one operation by the same surgeon before and after he has tried a definite alteration in his mode of practice." Dr. T. Keith is reported to have had 70 successive recoveries. It is known that he employs antiseptics to some extent, but we are not certain that he uses the carbolic acid with the spray; his success may therefore be due to other modes of performing the operation to which we shall refer subsequently. The results of Spencer Wells and Schroder's practice would appear to prove that the performance of ovariectomy, under the antiseptic method, is likely to be more successful than when this method is not employed. The fact remains, however, that under distinctly adverse conditions a signal success was secured, and it may be fairly considered mainly by the adoption of the antiseptic treatment—statistics showing clearly that the operation proved very fatal under similar unfavourable conditions before the application of antiseptics was adopted.

There is one important fact to be borne in mind, that the antiseptic method has never been proved to have acted injuriously to the patient. Although we cannot shew, statistically, that it is indispensable to the success of the operation, there is ample presumptive evidence that the adoption of this method does diminish the mortality after ovariectomy, and we have the fullest satisfaction in recommending its adoption in all cases, excepting in very young subjects, who are believed to be injuriously affected by the toxic effects of the carbolic acid.

It is not uncommon for the advocates of the antiseptic method of treatment to write and speak of its advantages as if the plan of treatment itself were able to

secure success almost in any condition. Without being disposed to underrate its advantages we may recite the great success of Spencer Wells, Baker Brown, Keith Kœberlé, and other operators, who without the aid of antiseptics, could show 27,25, and even larger successive recoveries effected by different methods of conducting the operation. We have a strong conviction that under whatever mode the operation is conducted the antiseptic method should be supplemented, and it is desirable to extend the enquiry with a view to ascertain in what way the operation can be best performed so as to contribute to the recovery of the patient. The most important step of the process is, perhaps, the management of the pedicle of the tumour. There are two principal plans of treatment—one is the extra-peritoneal, and the other the intra-peritoneal method. The former was first perfected and has been persistently adopted by Spencer Wells. The latter was systematically carried out by the late Baker Brown, and subsequently by Dr. T. Keith, and on a smaller scale by others; and in some operations, owing to the shortness of the pedicle, it is the only plan available. In the extra-peritoneal plan the vessels of the pedicle are now secured by a clamp. In the intra-peritoneal method, various procedures, such as the cautery ligature, *écraseur*, &c., have been adopted to prevent hæmorrhage, but with varying success. The main advantages of the extra-peritoneal plan are the prevention of hæmorrhage, and the avoidance of the decomposing material of the stump of the pedicle being retained in the peritoneal cavity; the latter occurring when the pedicle is ligatured and it is dropped into the abdomen. Operators, who have adopted each method, have respectively had great successes. The late Dr. Tyler Smith had 19 successive recoveries by using the ligature only in this mode.

Hæmatocele, subsequently to convalescence, has occurred, it is said, from the escape of blood from the stump of the pedicle, although we are not aware that this was proved by a *post-mortem* examination. Objections have been raised, and not without reason, against the use of the clamp on the ground that it has caused tetanus, obstruction of the bowels, and hernia in consequence of the incomplete closure of the abdominal opening, and that it may give rise to peritonitis from extension of the inflammation from the pedicle, and the probability of infected material being conveyed into the abdominal cavity. These contingencies have so rarely occurred that they need not be reckoned in comparison with the positive advantages. Septicæmia, however, is not prevented by this method of dealing with the pedicle, for it is now known not to depend upon that alone, but, as we have previously observed, upon quite different causes.

From the results obtained by the extra-peritoneal method of treating the pedicle, and on theoretical grounds also, it would seem conclusively determined that this mode is far superior to any intra-peritoneal plan that could be devised. However, the results obtained by the latter are so remarkable and encouraging, that it is necessary to compare the two methods with a view to determine which is the more advisable to adopt as a general rule of practice. There have been various procedures adopted for the internal treatment of the pedicle, but they may be reduced to two: the use of the ligature, and crushing with the employment of the cautery. In both methods the pedicle is dropped into the abdominal cavity, and the abdomen is closed entirely, excepting when it is deemed necessary to insert a drainage tube in the lower angle of the incision. Some of the results as regards the recovery of the patient,

when the ligature has been used, have been previously stated. The untoward results of the use of the ligature, are hæmorrhage from slipping of the ligature, the adhesion of the stump to important abdominal organs, gangrene of the pedicle, and the formation of abscesses at a late period of the convalescence ; the ligatures being principally concerned in producing these. The last named is the most common of these unfavourable contingencies. Hegar in 11 ovariectomies had three cases in which an abscess formed. Two in which the ligatures, gangrenous material and pus escaped by the rectum on the 16th and 19th days ; another in which the abscess pointed above the symphysis pubis and ligatures, and pus escaped on the 17th day. Martin had three cases in which the abscesses opened into the rectum about the 15th day after the operation of ovariectomy. Olshausen had two cases of a similar character. Although these are highly unfavourable occurrences, and militate against the use of the ligature, yet they are the exceptions, and in recent times they have occurred only very rarely, and may probably depend to some extent on the material used for the ligature. As a rule the stump of the pedicle becomes encapsuled by plastic lymph ; and its degeneration is thus probably prevented ; and the ligature thus becomes a harmless foreign body finally to disappear by absorption. Dr. Emmett is a strong advocate for the ligature, and expresses himself as of opinion that "the ligature in all probability will become in the future the means generally employed for securing the pedicle."

The employment of the actual cautery, with crushing, has been resorted to by only a few operators. The most worthy of mention are Dr. Keith, the late Mr. Baker Brown, and Dr. White of the United States, who all have achieved most successful results by the adoption

of the cautery. Dr. Keith, out of 50 cases, had only four deaths, and spoke confidently of procuring still better successes. According to report he has recently had 70 successive cases of recovery after having we believe adopted this method. The great dread of operators from the use of the cautery is hæmorrhage, but with Dr. Keith this has not occurred, and his experience proves that the fear of hæmorrhage in a properly conducted application of the cautery is groundless. It is probable that the instrument was not employed with the precautions with which its first suggestion was advised; and as the originating of the clamp and cautery is of local interest it may be useful to briefly refer to what we consider to be the failure in their application, and to the subsequent production of hæmorrhage, which the misapplication produces.

The author of this article was the first to suggest the clamp and cautery in ovariectomy. He advised its use for the division of adhesions, in which he had used it successfully, and further suggested its adoption for the division of the pedicle. At a subsequent period the late Mr. Baker Brown used a modification of the original instrument and cautery for dividing the pedicle, which he returned into the abdomen, entirely closing the incision in the abdominal walls. His success was very great, as he had 25 successive recoveries by this management of the pedicle. Mr. Spencer Wells also tried the plan, and as the cautery did not prevent hæmorrhage that gentleman could not recommend the proceeding as a safe one of conducting this stage of the operation. The original instrument was devised with the object of first crushing the internal coats of the vessels, and thereby of effectually securing the occlusion of the vessels. Mr. Baker Brown used a screw only, and this merely compressed the vessels.

This form of the clamp was also used by Mr. Wells, and in his hands compression was not effective in preventing hæmorrhage. We have used crushing with the cautery repeatedly and never had hæmorrhage, and we think that the use of the screw, instead of the crushing of the vessels, is the cause of failure, and if the instrument be properly used there is no fear of hæmorrhage occurring.

The results of the cautery in the management of the pedicle, and its advantage over every other kind of treatment, may be estimated from the following considerations. The eschar is very thin, and becomes detached in a few days. Waldeyer and Spiegelberg found the surface of the pedicle free from it in six days. In a patient who had the cautery applied in the treatment of the pedicle Heppner found the surface broad and smooth, and that the surfaces united by the cautery had separated from each other. Peritonitis is not excited by the use of the cautery, and there is little fear of septic infection from absorption of the putrescent matters. That this is probably the case is shewn in Mr. Baker Brown's cases, as the antiseptic method was not known to him at the time. Hæmatocele has not been mentioned by any operator as following the use of the cautery.

There are cases where the intra-peritoneal method of treatment must be adopted of necessity in consequence of shortness of the pedicle, and the consequent impossibility of otherwise dealing with it; and the operator will have to decide whether he will use the cautery or the ligature. But the question remains to be answered: is it advisable to adopt the intra-peritoneal method in all cases, and thus close the abdomen entirely? On reviewing the whole of the circumstances connected with this part of the subject we cannot but come to the conclusion that the intra-peritoneal method, with the use of crushing and

of the cautery, is the safest, and leads to the most successful results; and after the brilliant experience of Dr. Keith, we cannot but join in his commendation of the method, and recommend it for general adoption.

Drainage, after the operation, is a matter of great importance; but our space prevents a full consideration of the whole subject. It must suffice to say that we consider Dr. Marion Sim's method of drainage through the vagina as attended with great danger, and although some success has been secured under his plan of treatment, the disadvantages are so great as to lead every prudent operator to desist from so uncertain and dangerous method of proceeding. The plan recommended by Dr. Keith of a short drainage tube passed to the lowest part of the abdomen and secured in the lowest angle of the wound, is a simple, safe, and very effective plan of securing the free escape of any effused material which may have accumulated in the abdomen after the operation. The morbid changes which the fluid undergoes, and the readiness with which it is absorbed into the system, thus leading to a fatal issue from septicæmia, renders it imperative to remove the secretion without delay; and the plan first devised by Dr. Keith is admirably suited for the purpose.

Our space prevents a consideration of some other points of practical interest which might be usefully discussed. We regret this the less as the matters referred to are succinctly and completely discussed by Dr. Olshausen, who is also a successful operator; and we have much satisfaction in recommending his book, as we know of no work in which all that relates to the operation of ovariectomy is so carefully and dispassionately discussed.

JOHN CLAY.

THE SPECTROSCOPE IN MEDICINE.*

IT is generally admitted by thoughtful men that the key to unlock many of the mysteries of medicine will be found in the better development of physiological chemistry. At present this subject is very little cultivated even in the great schools and colleges of this country; while the profession as a class is almost destitute of any knowledge greater than is involved in their acquaintance with the coagulability of albumen by heat, or the reactions of bile with nitric acid. We are, most of us, as Trousseau said, very bad chemists, for anatomy and vital mechanics have occupied most of the best minds in our profession. Yet we are glad to know that this subject, so ably cultivated on the continent, is not neglected altogether in this country; for at Cambridge and Manchester, and elsewhere, there are original workers slowly building up the foundations of this important department of medicine. Among these indefatigable labourers for our benefit we must give the author of the volume now before us no mean place. Dr. MacMunn is well known to physiological chemists as an original and careful spectroscopic observer; and he has made many valuable contributions to the literature of this subject. In the present work he aims at giving us a simple treatise explaining the construction and use of the spectroscope, with its applications to physiology and pathology, in the hope of removing some of those difficulties which have stood in the way of its more general introduction as a means of clinical and pathological investigation. Comparatively little is at present

*"The Spectroscope in Medicine," by Charles A. MacMunn, B. A., M. D., Uni. Dub. London: J. & A. Churchill, 1880.

known of the spectroscopic appearances of pathological fluids, but Dr. MacMunn has discovered a form of hæmatin in the fluid of ovarian and parovarian cysts, which appears to be peculiar, although not always present ; the spectroscope also enables us to determine whether blood in the urine has come from the kidneys or bladder, and whether expectorated blood comes from the lungs or stomach. But the more extended application of this instrument will add, without doubt, very many facts to our present knowledge, and we believe the spectroscope will become as necessary an aid to clinical and pathological chemistry as the microscope is to the investigation of normal and morbid anatomy. Dr. MacMunn's book reflects much credit upon himself, and upon the great body of general practitioners to which he belongs, which has given to science some of her brightest names, and her most devoted servants.

PAY HOSPITALS.*

THE author of this book is well known to the profession as a writer, and above all a worker in the important duties of hospital administration; and in this town he is personally known to most of us, and his services have been not without their influence upon the efficient organisation of one of our largest medical charities. The present volume contains the results of Mr. Burdett's enquiries and observations into the working of the paying system, as an element in hospital management in most civilised countries; for it seems that Great Britain occupies the unenviable position of being bracketed with

* "Pay Hospitals and Paying Wards throughout the World," by Henry C. Burdett. J. & A. Churchill.

the "barbarian northern power" of Russia, as the sole exception to the adoption of this feature of modern civilisation. In France, Germany, Austria, Switzerland, and even Spain, hospital accommodation is provided at a moderate fixed tariff for those patients who, destitute of the comforts of a home, or the care of those near and dear to them, are yet able and willing to pay for accommodation suitable to the necessities of their case. Part of the book deals with that side of the question with which the London Home Hospital Association is now endeavouring to grapple, and there is only one opinion in the profession as to the desirability of realising the objects of that association, which intends to provide suitable lodging, nursing and appliances, for the well-to-do sick, for a payment ranging from seven to three guineas a week, which will include attendance by the resident medical officer; but should the patient desire it he will be at perfect liberty to employ any medical attendant of his own selection, with whom he will of course make his own arrangements as to remuneration.

The other side of the question is that of admitting into the wards of our voluntary hospital (*a*) remunerative patients, and (*b*) poor paying patients. The difficulties in the way of admitting remunerative patients into our present hospitals are, (1), that they would diminish the accommodation designed for patients of a poorer class; (2), that it would be impossible to arrange for the remuneration of the medical staff, without either paying them inadequately, or leaving them open to the charge of employing the hospital for their private patients, and of deriving personal pecuniary advantage from their hospital connection, which would be regarded with jealousy and disfavour by the profession; (3), that such an enterprise would be of the nature of a commercial

speculation, in which the managers of a hospital would not be justified in employing its funds. Although the first and last of these objections would be got over by a special fund being raised for the purpose of making such an addition to any of our present hospitals, and the second would be entirely abolished by leaving the treatment in the hands of a paid resident medical officer, with liberty to the patient to employ his own medical attendant, it is obvious that little advantage would accrue by this connection with an already existing institution, and that on the whole it is better to look for the independent formation of such institutions.

But the second part of this question, the reception of poor paying patients, is one well deserving the attention of the managing bodies of our local charities. Mr. Burdett recommends the adoption of this principle for both in and out patients. It is in practice in America, and most Continental States, and is not unknown in this country. In London, the German and French hospitals, the Hospital for Women in Soho Square, the London Fever Hospital; in the country, the various cottage hospitals; and in Edinburgh, at Chalmer's Hospital, this system has been worked with more or less success for many years. The difficulty is to decide who are to pay, and who are to be free? Mr. Burdett says, "the simplest and probably the easiest method is that which leaves the burden of proof to the patient. Of course, all accidents, and especially urgent cases, must always be admitted to a hospital without question at the time of application. Such cases can, however, be dealt with after admission. But in the ordinary run of cases a guarantee for payment must be secured beforehand. . . . Let the large hospitals jointly decide that a trial shall be given to paying wards, with free and pay beds, and let

the system be loyally worked, it may be safely asserted, that once tried, the pay system will never be given up. It will benefit the patients ; it will increase the practice of the great body of medical practitioners throughout the country ; and it will place the financial arrangements of all the hospitals on a sound basis. . . . To succeed, however, the system must be simultaneously adopted by all the large medical charities. . . . A man who has paid 3s. 6d. per week at a cottage hospital, and who has been glad to do so, has been known in his next illness to go to the County Infirmary to escape payment." As to the medical difficulty, he recommends that the assistant physicians and surgeons should attend the poor paying patients, and should receive a fixed sum per annum for doing so. "The present system has driven, not one, but many of our ablest medical practitioners to resort to general practice in the country, not from choice but from sheer necessity . . . because, forsooth, under existing circumstances, much of the work and few of the fees fall to the assistant physicians and surgeons of our largest hospitals."

There seems no *prima facie* reason why a system which works well on a large scale abroad, and in spite of difficulties succeeds on a small scale in this country, should not prove a great success when tried in our large hospitals. All are agreed that the present system is demoralising to the public, and unjust to the medical profession. Hospitals are year by year spending more money, and few institutions are free from pecuniary difficulties. The principle of accepting some payment from patients has been virtually conceded by the imposition of a registration fee, at one of the general hospitals, and nearly all the special hospitals in this town. It is admitted that this is in some cases a hardship, and in most cases much below what the

patients can afford to pay ; so that it would be fairer to the patients and advantageous to the hospitals to adopt a scale of payment regulated by the means of the applicant.

With respect to out-patients Mr. Burdett strongly urges the importance of not supplying drugs gratis, except in urgent cases or for special reasons. There can be no doubt that there is a large class of out-patients, who are never contented unless they are taking medicine, and who would be checked to some extent, if they had to provide this luxury at their own expense, without placing the medical officer in the position of having to choose the thankless and unpopular duty of refusing attendance, or of obeying the impulses of good nature, and the desire to avoid all unpleasantness, by prescribing bottle after bottle of harmless, but not altogether costless drugs.

In the last chapter we are told that the Home Hospital Association proposes, as soon as possible, to establish Convalescent Hotels at the seaside, for the reception of persons who have recovered from illness. Such institutions, with accommodation at reasonable rates, will be an immense boon to the middle classes. Altogether the impression we have derived from reading Mr. Burdett's book has been a very pleasant one ; he holds out a prospect of so many good things that we would all wish to see realised, and he appears to be so full of enthusiasm for the cause he has at heart, that he makes us cordially sympathise with him and heartily wish him success in all his endeavours. Whether he succeeds or not, Mr. Burdett deserves the gratitude and support of the profession, for he is working in our interests at subjects that few of us have the opportunity or training, or time to do. In assisting the Home Hospital Association we are aiding a work in

which all of us have an interest, for there are few of us who have not sons or brothers living in chambers or lodgings in London, and to whom such an institution as this association desires to found may prove a great boon. Unfortunately the legal decision with regard to Berkeley House has not, as Mr. Burdett anticipates in this book, been favourable to the association, and, for the time, they are without any suitable building, but this difficulty we have no doubt will be got over. With the other object of the association, the establishment of Seaside Convalescent Hotels, we all, as medical practitioners, as well as in our private capacities, must sympathise and wish well to. We cannot do better, therefore, than print the address of the association: 246, Regent Street, London, W., in the hope that all who have felt the need of such an institution, and are able to contribute will do so, remembering that they are not asked to give their money without a fair prospect of receiving a reasonable return in the shape of dividends.

PSEUDO-HYPERTROPHIC MUSCULAR PARALYSIS.*

IN this volume Dr. Gowers presents us with a reprint of a lecture that appeared in the *Lancet* for July, 1879, to which he has added two other cases which have come under his notice, and further details of the other cases. The lecture is an admirable *résumé* of our knowledge of this disease, based upon the author's own observations and upon an analysis of 220 cases collected from medical literature.

* "Pseudo-Hypertrophic Muscular Paralysis." A Clinical Lecture, by W. R. Gowers, M.D., F.R.C.P. London: J. & A. Churchill, 1879.

The essential peculiarities of the affection are briefly described; it affects the male much more frequently than the female, in the proportion of six to one; it is often distinctly hereditary, and as many as six (Lutz), or eight (Meryon), cases have been met with in one family; it is a disease of early life, commencing as a rule before six years; its commencement is often insidious, an indisposition to run, or a readiness to fall, existing perhaps for years before any actual disease is suspected; occasionally the disease has followed a physical injury, more frequently after an acute disease. Its characteristic is a progressive alteration in size and diminution in the power of certain muscles; the alteration in size may be either an increase or a decrease; in some rare instances every muscle in the body may be enlarged; commonly only a few; those most generally enlarged being the muscles of the calf; the extensors of the knee are sometimes large, usually wasted; the vasti, glutei, erectors of the spine, infraspinati, deltoids, biceps, triceps and masseters are those often enlarged; while the latissimi, pectoral muscles, trapezius, and sterno-mastoids are, if affected, usually wasted. "The electro-motility of the affected muscles is lowered to faradisation, but only in slight degree, except in muscles greatly wasted. Usually the irritability to voltaism is the same as to faradism; very rarely greater voltaic irritability has been observed." The affected muscles are *weak*, and the weakness is greater in proportion to the wasting; the symptoms are due to this weakness; the little patients stand with difficulty, keeping their feet apart; their gait is oscillating; the spine becomes curved antero-posteriorly. The weakness of the *leg muscles* causes the peculiar difficulty in rising from the floor or a chair; and Dr. Gowers directs attention to the habit acquired by these patients of putting their hands

on their knees to aid extension of these joints, as pathognomonic in its striking peculiarity. Later on shortening and permanent contraction of certain muscles lead to distortions of the body and limbs. A marked mottling of the skin has been observed, an exaggeration of that seen in healthy children; the temperature of the calves has been found to be higher than that of the thighs (Ord.); sensibility and reflex functions are usually unimpaired, but patellar-reflex may be absent; occasionally pains are felt in the diseased muscles; rarely there may be some difficulty in passing urine, or even incontinence; in some cases there is mental dulness or even actual idiocy (Langdon Down). The disease lasts for years, life being prolonged until nineteen or twenty years, and in some cases longer. Death usually results from inter-current maladies of which acute or chronic pulmonary affections are the most common.

The pathological condition of the muscles is a formation of fatty connective tissue in the place of the striped muscular fibres. Dr. Gowers regards this, not so much as a degeneration, as a perversion of development taking place during the growth of the body, and proceeding *pari passu* with it. The changes in the cord, described by himself and Dr. Lockhart Clarke, he believes were only secondary degenerations, as the cord in other cases has been found normal by very competent observers (Cohnheim, Charcot, Brieger, Bay, and Schultze). Those cases in which more definite changes—sclerosis, cell degeneration, &c.—have been described, are, he believes, improperly placed in this category.

The prognosis is extremely grave; it being doubtful whether any case in which the symptoms were well marked, has recovered. For treatment, arsenic has been recommended as a specific, and Dr. Gowers has seen benefit

from its use. Among other remedies he relies most on cod-liver oil, faradisation and friction of the affected muscles, and systematic muscular exercise; mechanical appliances, the plaster of Paris or poro-plastic spinal jacket, crutches, &c., contribute to the comfort of the patient; tenotomy in certain cases may be useful.

Dr. Gowers has added so much to our acquaintance with this disease, that a lecture from him is especially valuable, and we commend this little monograph to all interested in this disease. He has added to the value of his book by an appendix of cases, and a lithograph plate of the microscopical appearances of the diseased muscles.

ROBERTS' PRACTICE OF MEDICINE.*

THIS text-book having now reached its fourth edition must be regarded as fulfilling the principal requirements of students, and we are able to give a large measure of praise to the manner in which Dr. Roberts presents his subject to his readers. The compilation of text-books upon such an immense subject as the practice of medicine, which includes so many vexed questions, is one of very considerable difficulty, and we should not feel justified in criticising the opinions set forth with the freedom we might employ were we to find them in a special monograph. In looking through its pages we have marked several passages, and noted a few omissions, such as the absence of any mention of the changes in the semi-lunar ganglia in Addison's disease, or of syphilis of the arteries. In writing of albumen in the urine the

* "A Handbook of the Theory and Practice of Medicine," by Frederick T. Roberts, M.D., B.Sc., F.R.C.P. Fourth edition. London. H. K. Lewis.

author states, that when the condition is due to errors of diet or deranged digestion, it is of the nature of egg albumen, a statement for which we should be glad to see some proof. Hæmoglobinuria is mis-called hæmatinuria, a mistake for which there is no excuse, and which must lead to permanent error on the part of those who use it. But, while noticing these small failings, we have much pleasure in recommending this text-book as by far the most complete manual that can be placed in the hands of our students.

DISEASES OF THE RECTUM ; THEIR DIAGNOSIS AND TREATMENT.*

WE are pleased to find that this eminently useful and practical book has now reached its third edition, the present issue having been enlarged by some sixty odd pages and several new engravings. The chapters have also met with a better arrangement than was found in the edition published in 1873. Proceeding to examine some of the newly added material, we find, in the chapter on fistula, that the author suggests a division, resembling that of Mollière into anal, under which are classified the more trivial forms involving only a few fibres of the sphincter muscle ; secondly, the more serious fistulæ, pelvic or rectal, those which implicate both sphincters and open high up into the bowel. Such a division may often be very useful, but we doubt if the terms will be generally accepted, especially for teaching purposes, in preference

* "Fistula, Hemorrhoids, Painful Ulcer, Stricture, Prolapse, and other Diseases of the Rectum ; their Diagnosis and Treatment," by William Allingham, F.R.C.S. Third edition. London : J. & A Churchill, 1879.

to the time honoured, "complete," "blind external," and "blind internal." Mr. Allingham speaks well of a plan of treating the fistulæ of those patients who refuse to be cut, by swabbing out the sinus with carbolic acid, and then inserting a small drainage tube. On several occasions cures have been thus effected. With regard to the use of the elastic ligature, after employing it in 150 varied cases, the following opinion is expressed :— "I can truly say I have over and over again been very glad that the utility of the elastic ligature had been brought forward by Professor Dittel after it had quite fallen into oblivion." For phthisical cases there can be no doubt that this method of dividing fistula is to be preferred to that by the knife.

On the subject of internal hæmorrhoids, Verneuil's ideas, that the superior hæmorrhoidal veins are alone connected with the portal system, and that these perforate the walls of the rectum passing through "muscular holes," so that by the contraction of these openings upon the venous branches the piles in question are formed, are considered at some length. Altogether, though not denying the correctness of Verneuil's anatomical data, Mr. Allingham is confident that there is near the anus a free anastomosis of the superior middle and inferior hæmorrhoidal veins, and that the muscular apertures act as valves to the veins instead of points of obstruction to the fluid circulating in them. The outcome of Verneuil's investigations, viz., treating internal piles by mechanical dilatation of the sphincters, is thought in certain instances to be advantageous, causing but slight pain, and keeping the patient in bed merely for a few days.

To the chapter dealing with ulceration and stricture of the rectum has been added a table of 70 cases which have come under the writer's own notice ; of these, 60 patients

were women, 10 only being men. Of the total, 35 were beyond doubt syphilitic, and five others were more than suspected of a specific history. On 16 occasions, generally with relief, linear rectotomy was performed ; the treatment of this class of cases is never very satisfactory, dilatation only procuring temporary relief, and colotomy can only be advised as a *dernier ressort*. The space allotted to the consideration of rectal cancer in the present edition has been somewhat increased by discussing the advisability of excising the affected gut. Ten cases, in which Mr. Allingham has operated and removed the whole circumference of the intestine, are fully reported, but no definite opinion is stated as to whether the operation should be performed in a general way, although partial extirpations are unhesitatingly condemned ; a comparison of the results of excision with those of colotomy is not entertained.

Another addition to this work is a few pages on "some points in the physiology of the colon." Advantages have offered for experimenting with food and drugs in two cases when a direct communication with the cœcum was existent. It is shown that many substances pass through the stomach and small intestines without being absorbed or scarcely altered at all ; the conclusion arrived at is that the digestive powers of the colon have been much under-valued, and that life may be maintained by enemata much longer than is frequently supposed.

That the book is appreciated by the profession may be inferred from the fact that two editions have sold in America ; and, furthermore, it has been translated into several continental languages. It is undoubtedly the best modern treatise on rectal diseases.

PHYSICAL DIAGNOSIS.*

WE are very pleased to welcome this latest issue from the press of the New Sydenham Society. The work of Dr. Guttman, which has attained a wide circulation on the continent is scarcely known in this country, and certainly is not so well known as its great merit deserves. There is no book we have seen which gives more clearly the facts relating to the subject, and it is this very clearness, this simplicity and freedom from anything like an attempt to be in any way a treatise on practice of medicine or pathology, which gives the book its proper value, but which will to some seem a fault. It will not replace the little manuals with wood-cuts, which are used by most students, and we venture to predict will not be popular with young gentlemen who are grinding up for the college and the hall; but it will be regarded as an indispensable addition to the bookshelves of all thoughtful practitioners, and we are perfectly sure that everyone who reads it will feel that he has acquired a fresher, simpler, and more accurate conception of the physical signs of disease than he possessed before.

The translator is deserving of the highest praise; he has managed to retain the almost severe simplicity of the original, while he has rendered it into excellent readable English. Dr. Napier has earned the goodwill and gratitude of all the readers of his translation.

In conclusion we cannot help expressing a wish that the Sydenham Society may always make as good a choice of the work to be done and the man to do it.

* "A Handbook of Physical Diagnosis; comprising the Throat, Thorax, and Abdomen," by Dr. Paul Guttman. Translated from the third German edition, by Alex. Napier, M.D. London: The New Sydenham Society, 1879.

PUBLIC HEALTH.*

IN no country has the subject of Preventive Medicine received greater attention than in England, and at no time greater than at the present. The famous *Annales d'Hygiène* contain numerous essays on matters pertaining to the public health, more particularly in reference to medico-legal matters ; but English literature has earned the palm in good, honest, practical effective work, the Society of Arts has published in the last twelve months some admirable lectures, amongst which we note the Cantor Lectures by Professor W. H. Corfield, on "Dwelling Houses: their Sanitary Construction and Arrangements ;" classical lectures which should be read by surveyors, architects, members of local boards, and all those who have any interest in the health of the nation ; the society also has published various essays on water supply by some of the most eminent authorities of the day. Sewage, and the various methods of its disposal, have been lately treated of, and reports have been made of some of the local epidemics of typhoid fever, their source, and the best means to be adopted in similar outbreaks. We have had an opportunity lately of perusing many valuable annual reports of medical officers of health, in which the histories of epidemics arising in their districts have been most carefully noted, and most scientifically treated ; they have in many cases been most successful in staying the spread of disease by timely interference, and so have diminished the mortality rate from zymotic disease. Much good work has been done by the Sanitary Institute, and by the various associations of medical officers of

* "The Proceedings of the North-Western Association of Medical Officers of Health for the year ending February, 1879."

health. It is a matter for surprise that more of the general body of the profession do not amalgamate themselves with these societies, and take part in their discussions. The usefulness of these societies is crippled by the smallness of the number of members who are present at the meetings; and most valuable papers recording individual experiences have been passed by for want of a sufficient amount of discussion to elicit opinions from others, and so to come under more general notice. We have before us the annual report of the North-Western Association of Medical Officers of Health, in which are some very able articles. Dr. Verum (president) read a paper on "Birth Rates, Death Rates, and the Estimation of Population," in which he shews that in the determination of birth rates and death rates there is a correlation, but that there are many disturbing causes which hinder an accurate estimation of the population, and causes which are widely differing in nature. Some are largely sanitary, the others more especially social; these are questions of hygiene, those of economics; these are under the control of the physician, those are capable of regulation by the politician. He regards the taking of a census once only in ten years as a most disturbing cause in a fair estimation of all rates. To begin with we have the number at starting, and the age and sex distribution; and we know most, but not all, of the births which take place in each year, and how many of each sex; we know also the deaths in each year, and the sex and ages at death; but we do not know the number of emigrants, immigrants, and reflux immigrants, nor their ages, nor their sex. Here we have sex elements of error which entirely escape our means of enquiry. The ebb and flow of local industries also greatly disturb the statistician. Dr. Verum suggests an annual inspection of

the rate book, as possessing an actual clue to the population, under the supposition that it is to the interest of those in authority to have an accurately compiled rate book ; but recent experiences have shewn the fallacy of this supposition. The rate books are often kept in a very prefatory manner. No check, practically, in crowded districts, being of avail where properties are constantly changing hands, and where the population must of necessity be of a "floating" nature. Statistics can undoubtedly be furnished much more accurately by a local medical officer of health, who has charge of a small district, who knows the people ; knows their various diseases ; knows the characteristics of the district, and their peculiarities ; than by a medical officer who has a large district, and who must, of necessity, be a stranger to most of the places placed under his charge.

We notice among the proceedings of this Society a most valuable paper by Mr. Vacher, on the diseases of Animals, rendering them unfit for food of man ; these he divides into three classes.

1. Those diseases which make the food unfit for food of man.
2. Those which depreciate the quality of the meat, or make it preternaturally liable to decompose, but do not necessarily, except in their later stages, render it unfit for food of man.
3. Those diseases which do not necessarily depreciate the quality of the meat or increase its liability to decompose, and rarely render the meat unfit for food of man.

He thus is at variance with Dr. Parkes, who taught that "all diseases must affect the composition of the flesh," and that, though animal poisons may indeed be neutralized or destroyed by the process of digestion, the composition of muscle must exert an influence on the composition of our own nitrogenous tissue, which no

preparation or digestion can remove. Mr. Vacher's paper is a most useful and instructive practical paper to medical officers of health, who are often called upon to speak authoritatively and definitely in a court of justice as to whether meat is, or is not, unfit for food ; there is no text book sufficiently accurate or definite on this point, and therein is no authoritative ruling of the Local Government Board to aid him in his decision ; his experience in such cases must of necessity be a limited one, and his opportunities for investigation small. The meat usually seized is brought from a distance and sold in the market at a lower price than the local butchers sell. He has to contend with the jealousies of the local butchers, and with the ignorance of his Inspector of Nuisances, and it is impossible to obtain an unbiassed opinion. Meat has been lately submitted to us seized by an Inspector in open market, and condemned by him and by the "Meat Conner," or local butcher, who usually acts in such cases as a special opinion for the Board of Health. This meat was undoubtedly good, and was pronounced to be so after consultation with another Medical Officer of Health. Meanwhile great injury was done to the butcher ; the news spread like wild fire of the seizure, and people would naturally be chary of buying meat even with a shadow of suspicion about it. We remember also another case in which some supposed immature veal was seized, condemned, and destroyed, and the butcher heavily fined. The Medical Officer who condemned the meat could only swear to the probability of its causing indigestion, and of its not being nutritious ; this was not sufficient, and on appeal to the Quarter Sessions, the decision of the Magistrates was reversed, the butcher claiming that the veal was not sold as "prime," the price was very small, and the veal was wholesome, and only represented what

it was sold at, viz., as "cheap meat." Much must be left to the common sense of justice to all parties by the Medical Officer, and the cases are very few where the butchers have had to complain of a want of justice.

In his first class Mr. Vacher places as occurring in home fed or imported oxen and sheep, cattle plague, epizootic pleuro-pneumonia, sheep pox, cow pox (except when induced by inoculation), influenza, rheumatism, black quarter and the parasitic diseases, known by the presence of cysticerci. Amongst swine diseases, typhoid fever, epizootic pleuro-pneumonia, scarlatina, quinsy (strangles), anthrax or anthracoid erysipelas, and the parasitic diseases known by the presence of cysticerci and trichinæ.

In his second class, he places foot and mouth disease, tuberculosis, acute inflammatory diseases of the lungs, simple gastritis or gastro-enteritis, jaundice, nephria, cardiac dropsy, and the more common parasitic diseases known by the presence of the *cœnurus* in the brain, the *echinococcus* in the lungs and liver, and the distoma or fluke in the liver. In the third class simple catarrh, emphysema, hæmorrhoids, dyspepsia, common skin diseases, and parasitic diseases.

Space is wanting to comment further on this paper, a simple enumeration is all that is possible, as the subject he treats of is very large, and his paper itself is necessarily only an epitome.

ORIGINAL COMMUNICATIONS.

NERVE STRETCHING.*

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THE interest and importance of nerve pathology are only exceeded by the difficulty of its study and by the haze of ignorance that surrounds it.

The important discovery of the inhibitory influence exercised by nerves over the small vessels, and the consequent directing power exercised by them over all the processes of normal secretion and nutrition render the study of the nerves one of the most important of all biological investigations, while the fact that the nerves by the same inhibitory influence over the vascular supply, are mainly the superintendents of the sum of the processes we call inflammation, causes the study of their functions, normal and abnormal, to be of vital interest and of vital importance to the clinical student, whether medical or surgical.

The whole details of the treatment of disease by counter irritation depend probably upon neural pathology, and this mode of treatment so emphatically and eloquently insisted on by my colleague, Mr. Furneaux Jordan—a mode of treatment which the experience of each one of us commends as most useful and most important, probably would have no existence but for this function of the nerves, and would

* Read before the Midland Medical Society.

have lapsed into disuse, as indeed it had well nigh done, unless this intelligible explanation of its action had justified its revival in scientific surgery.

But my present aim has a more practical tendency than it would have, were I discussing either the microscopic anatomy of nerve cords or of nerve communications; I am more especially interested in what might be called the coarse anatomy and pathology of the nerves; but even this, while certainly less recondite, presents difficulties sufficient to justify our careful consideration. Let us take a mixed nerve—that is, a nerve containing sensory and motor fibres; let us briefly consider what is its anatomy and what its function, before endeavouring to pursue the investigation into its morbid conditions with their symptoms and treatment. Such a nerve consists of a bundle of nerve fibres, held together by areolar tissue, which forms for the mass we call the nerve, a sheath, and which fixes it in its position; the areolar tissue at the same time attaching it to, and separating it from the neighbouring parts, and forming a nidus for the minute subdivision of the vessels, which afford its supply of blood. As you are all aware each nerve fibre consists of a tube of homogeneous membrane, in which lies a substance, which coagulates after death, and which is called the white substance of Schwann, and a material within this called the axis cylinder. Both these materials in the living condition are semifluid, and the nerves in the process of examination often present parts bulging from excess of these contents which have been pressed into them from neighbouring parts of the tube, which in their turn appear empty.

The function of such a nerve is to convey sensations from the part it supplies. General sensations, such as of heat, cold, weight, or pain, and special sensations of

touch, not to mention in addition its trophic functions. Another function is to convey motor impulses to the muscles supplied by the nerve. In morbid conditions these functions become perverted or even abrogated. Here commences our difficulty: the minor disorders or perversions of function are rarely associated with mortal disease, or if so associated, are overlooked in the greater malady, so that we get no *post-mortem* investigations of the nerve state which causes them, while the much and most unfairly blamed vivisection can help us but little, as the symptoms of which we desire a physical explanation, are mostly subjective, and cannot be detailed by the vivisects.

The morbid conditions of a combined motor and sensory nerve are accompanied by very varying subjective phenomena; you may have partial or complete anæsthesia, or you may find considerable hyperæsthesia, or anæsthesia in one part, and hyperæsthesia in another; or modifications of sensation, tingling, itching, heat or cold.

The motor portion of the nerve may be so affected as to cause complete paralysis in the parts it supplies, or partial paralysis, or a very incomplete paralysis, causing a loss of the sense of weight or resistance; or on the other hand the function may, so to speak, be increased instead of diminished, and we may get either tonic or clonic spasm of the parts the nerve supplies. Now, as far as I know, there are no *definite physical conditions* either of a nerve, or a nerve centre, which are with any degree of certainty severally associated with these subjective or objective symptoms. Hence our treatment of them is, and must be until we know more of the subject, in the main empirical; and experience or experiment cannot fail to teach us; as it has in time past taught us the

fact that facial neuralgia is not cured by division of the facial nerve.

Many years ago, I had a patient in the General Hospital, who had his thigh removed for some injury. The man recovered and left the Hospital, but returned a few months later, with clonic spasms in the remaining portion of the limb. These spasms were accompanied by great pain, and caused much distress from the sleeplessness they induced. No physical condition of the stump could be detected to account for the distressing symptom, and the man died, absolutely worn out. After death, the part of the anterior crural nerve, where it passed over the brim of the pelvis, was found red—apparently inflamed from passing over a small eroded surface of the ilium. I don't know that our increased knowledge would have enabled us to find out this, but if it had, probably some operation directly attacking the site of nerve irritation, would have not only increased the patient's comfort, but would even have saved his life. We have, all of us who have any experience as hospital surgeons, met with those painful, distressing, I had almost said, hopeless cases of neuromata, or rather of bulbous nerves, occasionally occurring in stumps. I have myself operated for the removal of these growths, which, when they occur, cause so much pain, and tenderness, and spasm, as to render the sufferers life almost unbearable. Their removal, in my own cases, and in many others that I have watched, has been almost invariably followed by their recurrence, and by the recurrence of the same distressing train of symptoms. I believe that we shall find that an operation on the nerve in its continuity, an operation which (being performed on the nerve in its *continuity* is not liable to a similar hypertrophy, either of the nerve tissue or its fibrous envelope) to that found in

the bulbous ends of the nerve, will be much more likely to be productive of good results. Of the propriety of such operations in tetanus, I am more inclined to be doubtful. In this disease, at all events when traumatic, the local nerve injury, which so commonly, though not invariably, is found to exist, is very rapidly associated with a condition which has been termed increased polarity of the nerve centres. The removal of the eccentric source of irritation has, in my experience, rarely seemed to benefit the patient; at the same time I should incline to still advise, the removal of any nerve irritant, or, better still, an operation on the affected nerve in its continuity, for if there be not any diminution of the increased polarity of the nerve centre when such eccentric irritant is removed, I cannot help thinking there will be even less chance of it while the irritant is still present.

You may notice that I have always spoken of *an* operation upon a nerve in its continuity. I have done so designedly, as there are more operations than one that aim in different ways at the same result.

The result aimed at is the abrogation, temporary or permanent, of the functions of the nerve, as a carrier of motor and sensory impressions.

Now this result has been attained in at least three ways—the one by nerve stretching, another by nerve pinching, and, lastly, by nerve freezing. In nerve stretching the nerve is exposed, and there is passed under it the finger or some instrument, and the nerve is forcibly raised from its bed, and firmly pulled from above and from below. Now, let us consider what occurs during this operation: firstly, the cellular and vascular connections of the nerve are freely severed. We are treating a nerve in a way in which we dare not treat an artery; and such usage must, I should think, alter or interfere with, for a time, the nutrition of the nerve.

Nextly, the forcible pulling from above and from below might, I should think, sever some small fibres of the nerve, proceeding from it to neighbouring parts, especially if such existed which, from disease, were either more rigid or softer than natural—those more rigid, since they could not stretch would tear, while the softer ones would give way from possession of less tenacity than their healthy neighbouring nerve fibres. From this stretching too, any cirrlosed or thickened areolar tissue of the nerve, if such existed, would probably be altered in bulk or in shape.

And lastly, that pressing out of the nerve tubes themselves which I described as occurring under ordinary microscopic examination, would most certainly occur from the forcible pressure exercised by the finger in the operation of stretching, and this condition would be followed by a cessation of the function of conducting nervous impressions in any nerve fibres in which such displacements, either of the white substance of Schwann, or of the axis cylinder occurred.

These diffluent contents would in all probability gradually regain their position, so that the cessation of function would only be temporary.

Mr. Johnson Symington described before the Edinburgh Medico-Chirurgical Society, some experiments on the cohesion of nerves, which are of importance in connection with nerve stretching.

Out of 14 experiments on the dead body, in which weights were rapidly attached to the great sciatic nerve immediately below the gluteus muscle, 130lbs. was the average weight found necessary to rupture the nerve; the maximum of 176lbs. was required to tear the nerve in a strong muscular man, while the minimum of 86lbs. was necessary in the body of a young female, who had died of

phthisis. Six gave way at the hook attaching the weight, while the other eight separated at the nerve roots.

Mr. Joseph Bell has described the sensation in pulling down the sciatic, as the feeling of pulling a vegetable with long fibrous roots. It has been recommended to pull on the loop of the nerve until the leg is lifted from the table; but Dr. Watson uses traction until there is a considerable feeling of fatigue in the finger. I am endeavouring to prepare an instrument which will give greater accuracy to this operation, by measuring in power the amount of pressure employed.

M. A. Blum, in a memoir on this subject, states that (1.) Forcible extension is indicated in neuralgiæ that resist therapeutical measures, and are clearly confined to the nervous system. (2.) That it ought to be resorted to at an early period, when the adjoining nerves appear to be attached. (3.) Neuralgiæ of traumatic origin are peculiarly amenable to this method of treatment, especially when it is probable that cicatricial adhesions have taken place between the nerves and adjacent parts. (4.) In neuralgiæ affecting stumps, the extension should always be practised at some distance from the cicatrix of the amputation.

He says that elongation sometimes acts by disengaging the nerve from the neighbouring tissues which compress it, but its efficacy is chiefly due to the modifications it produces on the structure, and especially on its circulation; and that not only at the spot where the distension is made, but also at points more or less distant from the wound.

Now, let us for a moment compare with this operation that of pinching. In this operation the nerve would be but little raised from its bed, the vascular supply but little interfered with, as also, therefore, the nutrition of the nerve.

The conditions I have just described, of displacement of the contents of the nerve tubes and paralysis of the nerve functions, would be the chief results. This operation, *if successful*, would therefore be preferable to nerve stretching, as being less severe, and causing less injury to the nerve. Nerve freezing is performed by exposing the nerve, and freezing it with ether spray. In this the cellular and vascular connections of the nerve are undisturbed, as also the contents of the nerve tubes—these contents are however frozen, and whether such freezing would entail any permanent injury on the nerve I do not know; but probably not. This, therefore, is a more simple and less severe operation than either nerve stretching or nerve pinching, and is capable of being rendered even less severe in the case of superficial nerves, by the operation of freezing being performed without the previous exposure of the trunk of the nerve.

My own personal experience applies only to nerve stretching, and I have preferred this operation to the other simpler and less severe ones for this reason: that while we know so little of the physical causes of the symptoms objective and subjective for which such operations are performed, and so little also of *what* it is in the operation that does good, where relief has followed its use; it is well to perform an operation which, while more severe than some others proposed, is yet not dangerous to life or limb, an operation which, as I mentioned before, seems likely to affect the nutrition of the nerve, not temporarily only, but more or less permanently. I shall now, very briefly relate three cases in which I have performed the operation of nerve stretching.

A. B., a miserable ill-nourished man, was hurt in his work, and had to suffer amputation of the upper arm in its upper third. During the healing of the stump he

suffered more pain than usual, and for many months after he complained of severe pains in it, and a tenderness which prevented any examination. The stump was also very tremulous. Change of air, tonics, subcutaneous injections, were all productive only of temporary benefit. He was re-admitted, nearly two years after the amputation, and on examination under an anæsthetic, we found that the stump was a very good one; there were no cicatricial adhesions; there were, however, nodules, which were believed to be neuromata. An incision over the site of the brachial artery was made, and four or five nerve trunks were carefully, deliberately, and completely stretched. The wound healed satisfactorily, but the patient's condition was unaltered; possibly some nervous cord escaped being stretched; but there is a possibility also that the pain is feigned. The man has much the aspect of a malingerer, and has obtained, on account of his disability, a small pension from the corporation, which would cease if he were able to work. I must, however, recognize the possibility and even the probability that the pain is real, and that the operation has failed. I purpose again admitting the patient, and stretching the brachial plexus, when, the three cords being operated upon, will, at all events, give us the assurance that no nerve has escaped the treatment.

The second case, a young boy aged 17, had his forearm amputated at an Hospital in the district, and had complained for the two years following the operation of severe pain and extreme tenderness, which prevented his wearing a stump, or indeed doing anything, even attending his school duties. At the outer angle of the stump a neuroma was detected. An incision was made down near to this, and a small nerve, probably the radial, was stretched. Unfortunately, the nerve gave way close to

the neuroma. The pain was immediately relieved, and up to now, many months after has not recurred. I am inclined to attribute the cure to the stretching, since I have seen so many cases which have recurred where the nerve tumour was simply dissected off.

Case 3.—A. B., æt. 31, a forgerman, married, was sent to me by Mr. Ker, of Cradley, under whose care he had been for many weeks. Mr. Ker had tried everything—frictions, subcutaneous injections, electricity, and much internal treatment, with no beneficial result, for a pain localised about the middle of the back of the left thigh, which came on suddenly without any known cause, although a day or two prior to its ingress he had been occupied in heavier work than usual.

There was no paralysis, no starting, no anæsthesia, no hyperæsthesia, no heat; a little pain on pressure, but no œdema, or sign of deep suppuration. The man was easy as long as he lay in bed, but any exertion or motion of the limb, or even its flexion in a sitting attitude caused severe pain. To his great distress, he was quite incapacitated for work. The sciatic nerve was thoroughly stretched, being cut down upon with antiseptic precautions. The nerve was lifted from its bed and pulled forcibly from above and from below. The wound healed in five days. The man was kept in bed for ten days, and suffered no pain, and this happy result continued after he got up, and he is now, 18 months after, quite well, able to pursue his laborious occupation, and says his leg is as good and as strong as ever it was in his life.

Now I should be the last to advise an operation so severe and so uncertain—an operation which, as yet, I consider to be almost empirical, until every other known remedial measure had been tried. I consider the operation peculiarly fitted for those irregular and peculiar cases in which, however, being ignorant of the cause, we may more

justly employ an operation of the mode of action of which we are also ignorant.

I would certainly myself employ this operation in cases of tetanus, in which there seemed to be a strong probability of some nerve being torn or irritated by some foreign body. I would employ it for those intractable cases of neuralgia, such as some cases of sciatica, in which no other remedial treatment has proved of any use, and in which I think it would be quite justifiable to perform an operation, not dangerous in itself, an operation which would not be likely to make the patient worse, and which might, perchance, relieve the sufferer of the burden of a life-long affliction.

I subjoin some cases illustrating the experience of others in this operation.

Dr. Watson, professor of surgery, at the Medical College, Madras, gives four cases of tetanus in which nerve stretching was employed in conjunction with large doses of chloral, as he says, with the view of modifying the conductivity of the whole nerve from its roots to its termination, and of establishing a new and healthier action in it. Three of the four cases were fatal, although the clonic spasms of the limbs appeared to be controlled. Dr. Watson does not think antiseptic precautions essential, and curiously enough considers that suppuration in the course of the nerve that is stretched, is an important factor in the remedial action of nerve stretching.

Dr. Johnstone, of Kentucky, in a criticism of a case under Mr. Henry Morris, of nerve stretching for tetanus, calls attention to the necessity of stretching all the nerves going to the wound causing the disease. He considers that in Mr. Morris's case, in which there were sloughs below and in front of each malleolus, the long saphenous nerve, or the anterior crural, should have been stretched as well as the sciatic. Mr. Morris had, however, suggested amputation, which was not allowed, and

hesitated to cut down and stretch the anterior crural, on account of the very severe general spasm which followed directly upon the pulling of the great sciatic. Dr. Johnstone considers that in cases where the operation has proved beneficial for a time, but where the spasms have recurred, that a second or third stretching of the nerve should be tried. As yet the operation has not seemed to be very successful in tetanus, though Verneuil relates a case of cure.

M. Blum considers in the treatment of convulsive affections arising from injury—as contraction, tetanus, and epilepsy—that nerve stretching should be adopted in preference to neurotomy, when the spasms have their point of departure in a recent wound or cicatrix; also when there is pain in the site of the wound, and above all when the local phenomena tend to generalize themselves. He suggests that possibly extension of the nerves may prove of signal advantage in paralysis of sensibility as well as of motion.

Mr. Nankivell, of St. Bartholomew's Hospital, Chatham, and Dr. W. Eben. Watson, of Glasgow, each relate two cases of nerve stretching in tetanus, both successful, while Dr. Masing, of St. Petersburg, relates two cases of sciatic neuralgia, one traumatic, both successfully treated; and Duplay, one traumatic case of neuralgia from a growth on the ulnar nerve, also cured; and Baum a case of spasm of the muscles of the face, cured by stretching the facial nerve.

Since the above was written I have operated again upon A.B., the first case mentioned. The three cords of the brachial plexus were well stretched. The wound is not yet healed, so it is too soon to say much about the result, but the patient says the pain in the stump is gone; an admission he had been unable or unwilling to make after my previous treatment.

THE CAUSES OF SUDDEN DEATH.*

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IN this paper I propose to limit myself strictly to the causes of sudden death as it occurs in the course of disease, and to regard them more from a clinical than from a physiological or pathological stand-point. The whole subject, moreover, is so large and presents so much important matter for discussion, that I shall refer only to such cases in which death takes place, if not instantaneously, at least within a few minutes of the commencement of the attack; the system being, as it were, taken by surprise, and there being no time for any therapeutic treatment.

These causes, using a combination of Bichat's and Sir Thomas Watson's classification, I shall discuss under the following heads:—

First, as death commences at the heart, taking place either from a failure in the contractile power of the heart, *asthenia*, or from a want of blood for the heart to propel, *anemia*.—Secondly, as it commences at the lungs, the cause of death being due to suffocation, asphyxia, or more properly, *apnea*, brought about by some obstacle interfering with the due oxygenation of the blood, by preventing either the air or the blood entering the lungs. Thirdly, as being due to some morbid condition affecting the nervous system, always, however, bearing in mind that the immediate cause of death may be placed under one of the preceding heads. Of all these causes, by far the

* A paper read before the Birmingham Branch of the British Medical Association.

most important are those which interfere with the action of the heart.

Most important of all, and most numerous are those which produce death by *asthenia*, or a paralysed and relaxed state of the heart's walls—most important, because it is exactly in this class that death can be, if not wholly averted, at least warded off for some time. Such a condition is most commonly caused by some changes in the condition of the muscular walls of the heart, and especially fatty degeneration and its frequent companion cardiac dilatation.

By the term fatty degeneration, I do not allude to the comparatively speaking harmless fatty infiltration, but rather to the true fatty metamorphosis, the degeneration of the very muscular fibres themselves, so that under the microscope they are seen to have lost their striæ, and to have a granular appearance, while in most advanced cases nearly all traces of muscular fibres are in parts lost, their place being supplied by granular débris and oil globules. Such changes cannot advance far without considerable changes taking place in the circulation, and these are indicated by the feeble cardiac impulse, the irregular and intermittent pulse, and the attacks of syncope, to which such patients are liable. The heart in short loses its power, the few unimpaired muscular fibres which have sufficed to carry on the circulation become affected, one by one, with the prevailing disease, the intermittent pulse has intermitted for the last time, and the patient falls into a syncopal attack which is eternal. When the premonitory symptoms just mentioned have not been observed, others may cause us to suspect, the condition of the heart. Such are palpitations, with slow, feeble, infrequent pulse, unpleasant sensations over the cardiac region, occasionally of an anginiform character,

livid lips with enlarged capillaries on the cheeks, an arcus senilis and rigid locomotor arteries. The end thus long forewarned may still be sudden at the last, but in a great number of cases these warning symptoms are either absent, or have not been looked for. It is, perhaps, in such as these that the most appalling cases of sudden death have been met with. The fatty degeneration is not yet far advanced, and the heart is able to carry on the normal circulation, till a moment comes when a sudden demand is made upon its powers—a demand beyond the ordinary—and the heart proves unequal to the task set before it, it ceases in diastole, and the patient is dead. Thus it is very important that we diagnose early the existence of fatty degeneration. It is true we cannot cure it, but we can ward off many of its baneful effects, and more especially we can warn our patient against any exertion or extra calls upon its powers—ever fearful lest in some thoughtless moment he make fresh calls upon it and it fail to respond. Here, if ever, we must not level up, but we must level down. A chain is only as strong as its weakest link, and though a man may have, apparently, a strong constitution, good muscular development, a firm mind, with active eager impulses, they are all useless if the heart be fattily degenerated—worse than useless, because they tend to lead to demands upon its powers which it is unable to meet. We must, therefore, strongly advise such patients to order all their actions in conformity with what we know to be the condition of the heart. Better that our patient miss his train, or his omnibus, than that he run to catch it, only to reach it panting and breathless, and perhaps fall down dead within its doors.

Dilatation of the heart is another very common cause of sudden death; but here, too, a degenerate condition of the muscular walls is a most important factor, so

important that if only the muscular fibres be in good condition the dilatation may be but temporary, and replaced by a compensating hypertrophy. It is not in this latter class of cases that we need have much fear of sudden death. Such an event is most to be feared in those cases where at one time the hypertrophied heart sufficed to carry on the normal circulation, till degeneration taking place in other tissues of the body, take place in the heart as well, the precursor and the cause of a secondary dilatation. Then the diminished power of the heart is unable to propel the blood which therefore lags behind in the ventricle, and increases the internal pressure; the dilatation slowly but surely progressing, being often much aided by a mal nutrition of the cardiac walls. Hypertrophy, with dilatation, carries with it a much worse prognosis than simple hypertrophy, in direct proportion to the amount of dilatation. The danger of sudden death does not exist in the heaving slightly diffused impulse, with full bounding pulse, but there is very grave danger when breathlessness on exertion, palpitations, a very largely diffused and undulatory impulse, a weak first sound of the heart, and a full, rapid, irregular pulse, tell us that the hypertrophy has given way to dilatation, and the danger stares us full in the face when to these symptoms that of venous congestion is added. The mode of death is obvious, and is much the same as occurs in simple fatty degeneration. In other cases the ventricle gets more and more distended and dilated. Some sudden strain causes an undistension from which it cannot recover itself; the heart is paralysed; the pulse ceases to beat; the hand applied over the cardiac region may feel a few imperfect spasmodic contractions, as it were the last flicker of the expiring flame; even that stops, and the patient is dead.

Rupture of the heart may be dismissed very briefly. It may be doubted whether it ever occurs in disease without previous degeneration. Death may be due to the direct loss of blood, which would bring it under our second subdivision of death by anæmia; but more frequently it is due either to the pressure of the effused blood interfering with the heart's action, or to the rent in the walls preventing their contraction.

Another, and a very important cause of sudden death from degeneration of the cardiac walls is met with in certain specific fevers, and especially in diphtheria. Zenker has described two forms of muscular degeneration which take place in such diseases due to the continued pyrexia, namely, a granular and a waxy degeneration. The former at all events is common, and leads to a considerable diminution in the contractile power of the heart. It is comparatively speaking unimportant, so long as the patient lies recumbent in bed, but on any sudden exertion, as in defæcation, it may be attended with an alarmingly sudden fatal result. For this cause it strongly behoves us to be especially careful in the physical examination of such patients. Neglect of patients is bad, but the "*nimis diligentia*," or too great attention, which brings about the very result it would wish to avoid, is as bad if not worse. In much the same way sudden death may arise from asthenia in some non-febrile diseases, such as delirium tremens, acute mania, tetanus, diabetes, and others. In all these cases it is necessary to watch the pulse carefully, and be ready to order stimulants, and freely too, when necessary.

Again, sudden failure of the heart's action may arise in cases when there is no actual morbid condition of that organ, but when it acts so to speak at a disadvantage. This occurs most typically in pericardial and pleuritic

effusion. It is most common in the latter, and especially so where there has been any great displacement of the heart. It may almost universally be warded off by keeping the patient at perfect rest.

Embolism of the coronary artery leading to a bloodless condition of the cardiac walls, and consequent paralysis, has in a few cases brought about sudden death.

But sudden death from asthenia or paralysis of the heart, may take place in diseases of the valves, without the walls being necessarily affected. This is by far the most common in aortic regurgitation. In such cases the ventricle receives its blood, not only from the auricle through the mitral valve, but also from the aorta through the incompetent semi-lunar valves. There is thus great danger lest the ventricle at any time become over-distended, its action paralysed and it stop in diastole. In certain cases it has been suggested that the fatal result is due to anæmia of the brain, brought about by the aortic regurgitation. Sudden death in mitral disease is most probably due to the concomitant affection of the cardiac walls.

I now proceed to the other mode of death commencing at the heart, that is, death by *anæmia*. In such cases the heart stops, not in diastole, as in all the preceding, but in systole, and is hence found firmly contracted after death. This may occur in the first place, when there is no blood for the heart to propel as in rupture of an aneurism or any large blood vessel.—Or secondly, the blood may be in the system but not in the heart, as occasionally happens in paracentesis of the peritoneum for large effusions. In such cases, if care be not taken, the removal of the external pressure on the walls of the vessels, and the tendency to a vacuum, leads to a rush of blood towards the part, and consequently away from the heart. The fatal result

may also be brought about by some action on the nervous system through the sympathetic. The mode of prevention is obvious—namely, to withdraw the fluid slowly and to keep up firm external pressure. Thirdly, there may be plenty of blood in the system, but a spasmodic contraction of the cardiac walls prevents its entrance into the ventricle, and, therefore, its passage onwards. Such cases of sudden death are, of course, rare, but may be met with in poisoning by certain drugs, as digitalis, and possibly in some cases of angina pectoris.

The consideration of this very important disease, angina pectoris, has been left to the last on account of the little knowledge we possess as to the mode in which it cuts short life. It was classed by Heberden among the neuroses. Romberg called it a hyperæsthesia of the cardiac plexus. Lauder Brunton has shown that there is increased arterial tension during the attack, most probably not primary, but secondary to the disturbed innervation of the heart. It is nearly always accompanied with organic changes, of which the most important are fatty degeneration of the cardiac walls and calcification of the coronary arteries. It is a matter still under dispute whether the heart stops in systole or in diastole, but most probably the truth lies with those that hold the latter opinion. The symptoms are as a general rule typical. The first attack usually comes on after some exertion. The dominant symptom is pain at the præcordium, radiating thence in various directions, more especially down the left arm. The character of this pain varies, but most attacks are similar as far as its intense severity and the exquisite torture it inflicts on the hapless sufferer. Accompanying the pain is an indescribable agony, an overpowering dread of impending death. The patient is motionless; even in the agony of the pain he dare not

move, fearing lest the least exertion may bring about the fatal termination, which seems so painfully and indescribably near. The constrained attitude, the pallid face bedewed with large drops of clammy sweat, and the expression of agony, are such as once seen can never be forgotten. The patient afflicted with this terrible disease may succumb at the first attack or he may survive many. Sometimes the attack may be brought on by some emotional disturbance, as in a fit of anger, such as was the immediate cause of John Hunter's death. In a few cases the patient is found dead in his bed, the countenance placid and the features at rest, death occurring in sleep, without being preceded apparently by any warning symptom.

Passing from the causes of sudden death commencing at the heart, by far the most important branch of our subject, we proceed to those cases in which it commences at the lungs.

In the first place then, sudden death may be due to asphyxia, produced by an obstruction to the entrance of air into the lungs, as in pneumothorax, hæmoptysis, spasm of the glottis, etc.

Pneumothorax is very rarely the cause of sudden death, but it occasionally happens that one lung is rendered useless by old or recent disease, especially tubercle, or as the result of a large pleuritic effusion. In such cases the work of respiration is carried on only by the remaining lung. If on this side, therefore, there occur a sudden and extensive pneumothorax, there is no lung tissue to carry on oxidation, and speedy death must ensue.

Hæmoptysis may kill suddenly by the blocking up of the bronchial tubes, so that the patient dies asphyxiated from the entrance of air into the smaller air cells being prevented, and the same result may be brought about by

the rupture of an hydatid tumour, an hepatic abscess, a pleural effusion, or a soft cancerous growth into the bronchi.

Spasm of the glottis may be brought about in a variety of ways. Thus it has been met with in epileptoid convulsions, whooping cough, laryngismus stridulus, etc. At other times it may be due to the presence of foreign bodies in the larynx, such as polypoid tumours, which being sometimes long and thinly pedunculated, swing backwards and forwards with each movement of respiration, till they strike the glottis and originate the spasmodic closure. In other cases the foreign matter may consist of portions of necrosed cartilage or of pus. In certain paralytic diseases—such as progressive muscular atrophy, general paralysis of the insane and diphtheritic paralysis—spasm of the glottis is sometimes caused by the entrance of food into the larynx.

But perhaps the most important cause of spasm of the glottis is that which depends upon neighbouring ulceration, and it is an event that it always behoves the surgeon to be prepared for, ready to perform instant laryngotomy. It is no imaginary fear. It is real, and has more than once occurred; and so important is it, that we ought, in fitting cases, to perform laryngotomy as a precautionary measure, being wise before and not after the event.

Sudden cedema of the glottis, depending on neighbouring inflammation, especially of an crysipelatoid character, is another, though a rare cause of sudden death, as is also that form occasionally met with in renal disease.

That form of sudden death brought about by embolism and thrombosis of the pulmonary artery, is very important. They kill by producing a condition of apnœa, but in a different way from any of the preceding. In them the apnœa depends upon the entrance of the air into the lungs,

and therefore its access to the blood, being prevented ; but in these it depends upon an obstruction to the entrance of blood into the lungs. It is most frequently met with in the puerperal state. The attack comes on with appalling suddenness, and is accompanied by the most intense and horrible dyspnœa, causing the patient to gasp and struggle for breath, and tear off the covering from the chest in the vain endeavour to get more air. The pulse is very tumultuous and extremely irregular, finally being thread-like and even imperceptible. The intellectual faculties are in no degree impaired, and there is a horrible sensation of impending death. Thrombosis of the pulmonary artery may occur in other conditions besides the puerperal ; in any in which there is either a hyperinotic state of the blood, or a tendency to stagnation in the blood current.

Only rarely do we meet with cases of really sudden death due to affections of the nervous system. At first sight, when we consider the great mortality due to cerebral hæmorrhage, this statement may appear somewhat inconsistent with facts ; but if keeping before us the definition of sudden death with which I started, we search the records of the past and our own experience, we shall find that the instances approaching instantaneous death from this cause are very few and far between. Still, as such cases do occur, the consideration of what is meant by cerebral apoplexy may detain us a few moments.

Apoplexy is a very vague term. It was first applied to an attack of sudden coma, without convulsion, when the patient was struck down as it were by a blow, and seeing that this was generally caused by a hæmorrhage into the brain the word apoplexy was used as synonymous with it, and subsequently in connection with hæmorrhage into any organ. The principal causes of the apoplectic state are hæmorrhage, embolism,

thrombosis, congestion, and uræmia. Congestion rarely causes death at all, and uræmia very rarely really sudden death. Embolism and thrombosis, even of the largest blood vessels, scarcely ever do so, and you will readily admit this when I call to your mind the case of a man suffering from aortic aneurism, in which Mr. Heath tied the common carotid. The man died in a few hours, with symptoms that appeared those of asphyxia. After death it was found that the whole of the cerebral circulation had been carried on by one vertebral. If, with such an obstruction to the circulation, a patient can live some hours, it seems scarcely likely that the occlusion of any one of the cerebral vessels can cause sudden death.

When sudden death occurs from hæmorrhage, the amount of blood effused is generally large in amount, and it takes place into some important region, as the pons or medulla, destroying life, as has been before referred to, by interfering with the movements of respiration, or with the action of the heart. Two cases of sudden death from meningeal hæmorrhage pressing on the pons and medulla have come under my own notice.

The causes of hæmorrhage arrange themselves under three great heads. In the first, there is an increase of the internal pressure within the blood vessels, such as may follow hypertrophy, excited heart action, arrested action of the sympathetic with vaso-motor paralysis, or venous congestion. In the second class, there is, as the primary cause, diminished vital elasticity of the arterial coats, such as may arise from atheroma or calcification, fatty degeneration, minute aneurismal dilatations, purpura, and scurvy. In the third class, the hæmorrhage is due to the rupture of a large cerebral aneurism or a vascular erectile tumour. An important predisposing cause must not be over-looked, viz., the want of support to the blood vessels,

which is so frequent in the brain; the smaller arteries lying almost unsupported in canals of large diameter. In the corpus striatum, Dr. Bastian has found these canals to be nearly three times the size of the blood vessels they contain; and it is in this spot that hæmorrhage is most frequently met with. In many, if not most of the cases of cerebral hæmorrhage, more than one of the causes mentioned above are combined. Thus in chronic Bright's disease we have a degenerated and atheromatous state of the vascular walls, together with increased internal pressure consequent upon the hypertrophy, so frequent an accompaniment of that disease.

Thus, gentlemen, I have endeavoured to explain the causes of sudden death. It is no unimportant subject. Many a time when we cannot cure, we can still ward off death by remembering the quarter whence it threatens; we cannot cure, but we can often keep alive, and Nature working may do the rest. Do not let us then be disheartened by what appears to be at times the uselessness of remedies. We may have very few specific remedies, there may be few of those brilliant triumphs in medicine which have made English surgery a praise in the earth; but I hold, and I am sure that you will all agree with me, that the saving of a life by waiting on Nature, as it were keeping death at bay, till Nature's powers can reassert themselves, is a triumph not to be despised; and a triumph at the same time to which we can all attain, if we carry into practice, not only a list of fashionable remedies, but also a full, clear appreciation of the modes in which death threatens the system.

ON THE TREATMENT OF ENDO-METRITIS,*

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MUCH has been written upon the treatment of inflammation, and the practice advised has always depended upon the views held by the writer as to the pathology of the disease.

When all men believed that inflammation was simply "increased action," to lower that increased action was rational, and hence depletion, local and general, was universally in use.

But as the complex nature of inflammation, or rather of its causes, came to be understood ; when the influence of innervation and of perverted nutrition were more clearly brought out, there came doubt and division ; and some stimulated, whilst others lowered, according as they believed inflammation to be a manifestation of exaggerated vital force, or an effect of its depression.

In the field of surgery it is now generally recognized, that whatever the cause of an inflammation, the best treatment thereof is by rest of the part affected—rest mechanical, rest physiological, rest absolute. And very various are the means used to procure this rest. Altered position, whereby gravitation empties the distended vessels, gentle pressure, perfect immobility obtained in a dozen different ways—all these mean, simply, rest.

In the domain of the physician, however, the principle is only partially applied ; perhaps, because of the many difficulties which beset its application. One cannot stop the action of a man's heart whilst an inflamed pericardium

* Read before the Midland Medical Society, March 10th, 1880.

gets better ; or of his lung, whilst the irritated pleura recovers ; but we moderate as far as we can the action of the heart ; we try to relieve local vascular tension by drugs, or by blood letting, or by blisters.

An inflamed stomach we do rest, by stopping food by mouth, and trusting to nutritive enemata ; whilst in peritonitis we give opium to arrest all action in the intestines ; and in ovarian irritation the same object is attempted by bromide of potassium, or some other favourite sedative.

An overworked kidney we rest, by transferring some of its work to the bowels and some to the skin.

When inflammation has become chronic, I know other factors must enter into its treatment. Morbid products now exist, and absorption must be induced or promoted ; but still in direct proportion to the delicacy of the affected organ, and to the complex nature of its functions, is the importance of maintaining physiological and mechanical rest.

Whilst a man recovers from an apoplexy his brain must rest as completely as may be ; and no man feeds a patient convalescing from gastric ulcer on other than the simplest and blandest food.

The womb, of which I am to speak to-night, is rich in nerve supply, because ever functionally active. Even in the unimpregnate condition, hyperæmia and (relatively speaking) anæmia constantly succeed each other. Its lining membrane is created, used up, cast off, and again renewed with wonderful regularity ; and as it forms part of a system strangely and closed linked with the emotional or psychical nature, it is, therefore, easily affected by the mere workings of the mind. It is liable alike to dangers from within and without ; derangements functional, and evils septic ; diseases idiopathic, and

lesions traumatic. Therefore, it is subject to inflammations, various in cause, in specific action, in intensity, and in the site attacked. Natural fluxion, or normal involution, from some, perhaps, trifling cause, may pass into congestion, hyperplasia, abnormal secretion, or abrasion, and even interstitial inflammation and per-uterine mischief may supervene.

About the treatment of inflammation of the womb in its acute or active stage there is little difference of opinion. If septic, the septicæmia is treated according to our lights (or darkness), and if idiopathic or traumatic: sedatives, hot fomentations, and local blood letting are in general use.

But it is to the more chronic condition of endo-metritis I ask your attention to-day. I say *more* chronic designedly. All authors agree that most cases of this disease occur in weak ill-nourished women after childbirth (I think it is much more frequent after abortion, than after labour at full term), and that it is the result of sub-involution. Such women come to the out-patient room of the hospital, four, six, or eight weeks after abortion or labour, with "bearing down," with "back ache," often with much pain referred to the ovarian region, and always with a discharge, in the early instances streaked with blood; later, glairy or puriform.

It is to the treatment of this sub-acute, but not absolutely chronic state of the disease, I wish to confine my remarks to-day. On examination of such a case, the cervix is seen to be more or less swollen, the os patulous, with, perhaps, erosion on one or both lips, and a discharge welling from it; there is no great amount of tenderness to the touch. If the sound be introduced, the cavity may be found somewhat lengthened, and occasionally there is an exquisitely tender spot at some part of the fundus.

The whole womb gives an idea of weight, and is not infrequently flexed.

Until a comparatively recent period there was but one mode of practice in such conditions. Astringent injections were thrown into the vagina; but when the use of the speculum became fashionable, every man armed himself with a stick of nitrate of silver, and touched so-called ulcerations with much determination and great frequency. In ninety-nine cases out of a hundred the seat of the ailment was not reached, but the doctor did something mysterious, and a little painful, and the patient was pleased.

Later still men saw this, and one began to hear of what every specialist has often seen, cases of occluded os, from incessant cauterization; and then the pathology of the condition was studied more carefully, and we are now rightly taught that medication, to be useful at all, must be applied to the uterine cavity itself.

The long and animated discussion which took place at the obstetrical section of the British Medical Association, at the Dublin meeting, showed an almost universal consensus of opinion upon the general principles of treatment. Astringent injections or pessaries having failed, caustics are to be applied to the lining membrane of the uterus. So far men agreed, with scarce a dissident, but as to details they differed much.

"Intra-uterine cauterization, quite right. But to what extent? What agent is best, and how apply it; how often, how much?"

Here followed discussion loud and long. One man cured his cases by two or three applications of carbolic acid; another, by nitric acid; a third, by chromic acid; and acid nitrate of mercury, solution of iodine, iodized phenol, and a host of other fluids were loudly vaunted;

to be injected, to be painted with a brush or with a bit of cotton wool round a probe ; to be squeezed from a sponge by a tiny piston, or poked through a platinum canula. But others said that fluids thus used were either worthless or dangerous ; and powders, as alum, borax, or tannin, must be puffed into the womb by a bellows ; whilst a bolder one still, and a braver one yet than all other, asserted that all drugs were alike failures, and declared for the actual cautery.

Noting the present intensely surgical attitude of gynecologists, I venture to prophecy that, at the next meeting, we shall be told that the real seat of the disease is not in the womb at all, but in the ovaries, and, therefore, the short, easy, and rational cure, is to perform oophorectomy.

Now, after having seen a good deal of most of these remedial measures, and something of all, I am bold to say that these effects are in the main most unsatisfactory and disappointing, and, although here and there a case is cured, the large majority of poor women are not benefited.

One of my colleagues, in reply to a question as to his results, replied, "Oh, they come until they get tired, and then they drop off." My own experience is that patients with other diseases may come, and may go, but these come on for ever, or at any rate until the menopause. Another reflection, which tended to make me sceptical as to this universal causticing, was the question as to whether this affection is not to a great extent caused by, or at least kept up by some perverted nerve condition, to which all its phenomena are secondary.

Again, I had noticed the frequent failure of such agents in similar conditions, and on my mentioning these views to Dr. Heslop, he at once instanced the sub-acute and chronic form of tonsillitis as an affection which he had

seen causticed into permanency, but never into cure, and he now never allows a tonsil to be touched with nitrate of silver, or any other irritant.

Holding the views which I have thus shadowed forth, I now endeavour to treat endo-metritis, whether cervical or fundal, on corresponding principles. First, by improving the general health, and giving tone to the nervous system, as in nine cases out of ten the patient has been worn down by work and worry, or exhausted by constant care or copulation, parturition or pregnancy, lactation or starvation. Then the natural consequence of exhausted nerve power being irritation of the parts supplied, I endeavoured to give local rest, and to soothe the irritated periphery. This I do by the intra-uterine application of direct anodynes, and of these I have the greatest confidence in morphia and belladonna. I smear the point of a Playfair's probe with a soft extract of belladonna, and passing it into the womb leave it there for a few seconds to allow the extract to be absorbed. That this is rapidly done is witnessed by the patients often telling me that there is something wrong with their sight. The morphia is used in a similar manner, by taking up $\frac{1}{3}$ or $\frac{1}{2}$ a grain on the point of a moistened probe or sound. A belladonna plaster is applied to the sacrum, and in some cases an opiate suppository used for two or three consecutive nights. Sometimes, where there is much thickening, a glycerine tampon, and local scarification, whereby an ounce or so of blood is withdrawn, helps much in the treatment. Where, after most of the acute symptoms have disappeared, aching continues, a blister over the sacrum is very useful; or a weak liniment of croton oil. I enjoin, (but with small hope of compliance,) absolute sexual abstinence, and without insisting on bed, I suggest the importance of

rest, especially warning my patient against constant standing, or laborious work. The medicines which seems to me most useful are phosphorous, and iron: sometimes I give strychnine. The bromide of potassium and ammonium have often proved beneficial in my hands.

I shall probably be told that this treatment is entirely palliative, not curative. My answer to this is that anodynes are often *curative*; that I have known a single hypodermic injection of morphia cure a long standing neuralgia of the breast; and that in my cases of endometritis I find, not merely a cessation of pain, but a subsidence of swelling, and a repression of abnormal secretion; and, in short, that my results are much more satisfactory than they used to be.

This is my justification for troubling the society with this communication. I do so in the hope, not that it will tend to abolish the use of caustics in intra-uterine surgery, for I wish definitely to state that they are in certain cases most valuable; but in the hope of restraining a use, or rather an abuse, which has become almost as universal, and altogether as empirical, as that of blood letting a hundred years ago.

ON THE TREATMENT OF EMPYEMA, BY RESECTION OF ONE OR MORE RIBS.

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So far as I can learn from a careful search through the various Medical Journals of the past few years, the operation of resection of ribs for the cure of chronic empyema is new in this country.

My attention was first directed to it by the following paragraph in the London Medical Record of August, 1876.

"Resection of rib in empyema. Dr. Peitavy records two cases of empyema treated by resection of a portion of the rib for the purpose of permanently widening the aperture, and so facilitating both the discharge of pus and the injection of fluids. In the first case, aged 64, pus was removed by incision six weeks after the first symptoms. In spite of washing out the chest by the double catheter, injection of tincture of iodine, and the use of a drainage tube, pus was retained, and the patient suffered from fever with evening exacerbations, rigors, loss of appetite, and increasing weakness. Attempts to dilate the aperture with laminaria caused great pain, and it became impossible to wash out the chest properly. Finally, five months after the incision, a portion of the seventh rib, somewhat more than an inch in length, was removed by the chain saw. Pus escaped, a drainage tube was inserted, and the symptoms were relieved from that time. The tube was removed in a month, and in another fortnight the wound had closed. In the second case, aged 56, the result was less striking. Two weeks after

the first incision, and only seven weeks after the first symptoms, a portion of the eighth rib was excised, and a tube inserted. Fever however continued, and as injections caused coughing and dyspnœa, the tube was removed after twelve days. The case was complicated by a bronchial fistula, but was completely cured about two months after the resection. A third case of empyema is recorded from the practice of Professor Simon, in which resection of the rib acted not so much by allowing the free discharge of pus, as by permitting the approximation of the ribs, and the obliteration of the cavity. Peitavy prefers resection to Frantzand's practice of fixing in a silver canula, because it is less painful, less irritating to the pleura, and tends to diminish the size of the cavity.*

The frequent opportunities I enjoyed when Pathologist at the Queen's Hospital of observing the various terminations of empyema, and the condition of the thorax after death, drew my attention to the advantages of the operation above described. In empyema the lung is generally collapsed and bound to the spine by the thickened and inflamed pleura. If the pus escape either by bursting externally or into the bronchi, or by external incision or aspiration, the chest wall on the affected side sinks in until the ribs rest on one another, the intercostal spaces being obliterated; the cavity is further diminished by the ascent of the diaphragm and extra-expansion of the sound lung. If these processes are sufficient to allow the parietal and visceral layers of the pleura to come into contact, the lung may again expand, and the chest be restored to its normal condition as the lung increases, but if not, the side of the chest remains permanently collapsed, with a cavity containing air and pus between the outer surface of the lung and the chest

* From *Berliner Klin. Woch.*, May 8th, 1876.

wall ; under such conditions lung expansion is impossible, drainage is equally impossible, and the introduction of tubes adds to the mischief.

The object to be attained by excision of one or more ribs is to allow the chest wall to collapse fully on to the lung, so that the parietal and visceral surfaces of the pleura may be brought into complete contact, and external atmospheric pressure be brought to bear on what is really an enormous abscess cavity. I am anxious to impress this point fully, as an erroneous impression has arisen that the operation is done solely to allow of the easy introduction of drainage tubes.

The operation is exceedingly simple. The rib to be operated on having been defined, an incision is made along it right down to the bone for the length required ; the periosteum is raised with a raspator ; the part to be removed sawn nearly through with a fine straight backed saw, and the section completed with bone forceps. If the operation be properly done the intercostal vessels and nerve are separated with the periosteum and give no trouble. It is well to make both grooves in the bone before cutting it through, and I am inclined to think it is best to take a large piece from one rib rather than a smaller from two or more. After the removal of the bone the edges of the wound are brought together by sutures, room being left for a drainage tube. Should antiseptic treatment have been adopted for the previous incision it may be continued. The amount of rib to be removed depends on the individual case. It is better to take too much than too little.

The first opportunity I had of performing the operation was in April, 1877. The following history of the case is from the notes of our then House Surgeons, Dr. Currie and Mr. Wm. Moxon.

Empyema treated first by strapping the chest and tenax, with much improvement—Subsequently relapsing—Excision of part of seventh rib—Recovery.

Case 1.—Eliza Aston, æt. 7, admitted to Ward 1, October 7th, 1876.

History.—Child has been ill since before last Christmas when she had measles; convalescence was tedious and seemed to have been followed by an attack of bronchitis. About the beginning of February complained of pain in her left side which has continued more or less ever since, and after a time (mother cannot specify exact date) a hard swelling appeared below the nipple. Poultices were applied, but the parents refused to let the medical man open it. Seven months ago the swelling burst, when about a pint of inodorous matter tinged with blood gushed out, the discharge has continued more or less ever since and has become offensive. *Present Condition.*—Child is fairly nourished and of average height. *Examination of Chest.*—*Inspection.*—Left side is comparatively immobile, and, on the same side in the sixth interspace a little external to the vertical mammillary line, there is a large scab covering an opening which apparently communicates with the chest. *Palpation.*—There is deficient expansion and elevation on left side, vocal fremitus completely absent on left side and weak on right. *Percussion.*—Absolutely dull over the whole of the left side—anteriorly and posteriorly. *Auscultation.*—Exaggerated breath sounds on right side, and a few medium râles. Vocal resonance slightly increased. Bronchial breathing somewhat distant on left side, becoming louder and harsher towards apex, medium and coarse râles; ægophony towards root of lung. *Treatment.*—Generous diet, Cod liver oil, and Mist. Ferri Phosph. ʒii ter. in die. The fistula was covered with

tenax, and the left side of the chest firmly strapped. The treatment was continued for three months with much improvement, after which she was made an out-patient, the fistula still continuing to discharge. She was re-admitted April 9th, 1877, having during the interval become very thin, and her general health growing worse. The following was the condition of the chest on external examination:—Inspection: slight falling in of left ribs; intercostal spaces much less on the left than on the right side; a fistula discharging pus, and surrounded by a red adherent margin, two and a half inches below and half an inch to the left of the nipple. The left side of the chest does not move in respiration. Percussion: dulness over whole of left side. Auscultation shews an entire absence of all breathing sounds on left side. On April 20th, chloroform having been given, an incision was made over the seventh rib, commencing near its junction with the costal cartilage and passing backwards for three inches; the periosteum of the rib was separated with the raspatory and raised with the structures superficial to it. A portion of the rib about an inch and a half in length removed. There was a little venous hæmorrhage. A large drainage tube was introduced at the anterior part of the wound through the fistulous track; the rest of the wound being closed by silver wire sutures. Oakum dressing. During the operation it was noticed that the ribs rested directly on one another, the intercostal spaces being quite obliterated. A very marked relief to the breathing was apparent as soon as the resection was complete. April 21st.—Patient has passed a comfortable night. Much fetid pus, mixed with air, has escaped from the drainage tube. Temperature: morning, 99°2'; evening, 101°2'. 22nd.—Patient comfortable; much discharge; no pain or cough. Temperature: morning, 99°4'; evening,

101'4". 24th.—Passed a good night ; discharge copious. Temp.: morning, 100 ; evening, 102. 26th.—Patient about the same. Temp.: morning, 28'8 ; evening, 100'4". Wound united, except where tube is. 28th.—Uncomfortable ; complains of a good deal of pain on breathing ; appetite bad. Temp.: morning, 100 ; evening, 103'4". 29th.—Better ; discharge less, but still copious. Temp.: morning, 101'4" ; evening, 101°. May 2nd.—Discharge still copious, but less offensive ; general health good. 10th.—Discharge much less, and the patient is getting much stouter ; eats, drinks, and sleeps well ; breath sounds can be heard behind over upper third of chest, but the greater portion of left side is dull, though not absolutely, and devoid of breath sounds. June 2nd.—Discharge ceased yesterday. Temperature normal. General health good.

After this date to the time she left the hospital, June 23rd, the patient's recovery was uninterrupted ; the discharge did not return. The physical condition of the child on leaving the hospital was as follows :—There was a little movement of the ribs on the affected side ; impaired resonance over the whole of left side of chest ; and a few breath sounds over upper part of left lung, more audible behind.

I exhibited this patient at a meeting of the Midland Medical Society in 1878, about eight months after she left the hospital. She was examined by Dr. Sawyer, the President, and the function of the left lung appeared to be performed as perfectly as the right ; the portion of rib removed had been reproduced ; the spine was straight, and the linear cicatrix was the only trace of the previous condition.

The following cases are from the notes of Mr. Rhodes and Dr. Clark, the Resident Medical Officer of the

Children's Hospital, to whom we are deeply indebted for the careful manner in which the treatment was carried out. Four of them were operated on by my colleagues, Messrs. Elkington and G. Evans (who have kindly permitted me to quote them in illustration of this paper), and the others by myself.

Case 2.—Charles Harrison, æt. one year seven months, admitted into the Children's Hospital, August 7th, 1879, with fluid in the right side of the chest. The child was in an extremely emaciated state, so that very slight hopes were entertained of its recovery. Thoracentesis was performed on August 25th, between the 6th and 7th ribs, 3oz. of pus being withdrawn, and a drainage tube inserted. The operation was performed antiseptically. No improvement followed; the side of the chest sank until the ribs rested on one another, the intercostal spaces being quite obliterated; the pressure by the drainage tube had caused erosion of the rib. Hectic phenomena supervened, and as the case seemed a suitable one, excision of the rib was proposed.

The operation was performed on October 10th, in the usual manner, with antiseptic precautions. There were not many changes to be recorded after the operation. The temperature chart shewed slight fluctuations and occasionally a sudden rise, which was always found to be due to allowing the opening to close before all the pus had escaped; a fall immediately following release of matter and re-insertion of the drainage tube. The child's appetite steadily improved; he increased rapidly in weight, and was sent to convalescent home on January 8th, 1880, the wound having been completely healed since the third week in November. Coincidentally with the gradual closure of the wound, and cessation of discharge, the lung was noticed to expand, and at the time he left

the Hospital very little dulness remained ; although there was still some deficiency of respiration on the affected side.

Case 3.—Sarah W., admitted January 29th, 1878, under the care of Dr. Marshall. She had been ill for three months. On admission she was very emaciated and unable to stand, the right side of the chest was dull throughout, and a fluctuating swelling was present about $1\frac{1}{2}$ in. below the right mamma. A discharge of pus had taken place from this swelling (the mother said to the extent of three pints) nine days before admission. January 30th.—About 20 oz. of pus were evacuated by a free incision between the 8th and 9th ribs, in a line with the angle of the scapula. A drainage tube inserted under carbolic spray, a free discharge continued for some time ; the chest was frequently washed out with sol. acid carbol. 1 in 60. An occasional accidental retention of pus was marked by a rise of temperature, generally in the morning. March 17th.—The child's general condition was improved. She took her food well, and the discharge had considerably diminished ; it was therefore thought advisable to remove the drainage tube. This was followed by a considerable retention of pus, between each dressing, and hectic symptoms ; the wound was kept open by a probe ; but, on March 28th, it was necessary to introduce the drainage tube again. It was retained until April 11th, when the discharge had again nearly ceased, the lung had somewhat expanded, and the ribs retracted to their utmost limit ; in fact they rested upon each other, and some of them overlapped. It was now thought that the child was in a fair way to recovery, but, on April 24th, the wound having healed, hectic symptoms again supervened, and the patient was in considerable danger. Mr. Evans re-opened the wound and re-introduced a

drainage tube, at the same time advising that a portion of the rib should be excised at the earliest opportunity. May 24th.—Mr. Evans made an incision a little above the original wound over the 8th rib, the periosteum was separated with a raspatory and about two inches of the 8th rib removed. At the same time a free opening was made through the thickened pleura. A discharge of pus continued for some days; but, by the 18th of June, less than one month after the operation, the temperature was normal, the discharge had ceased, and nothing remained but a granulating wound marked by the present cicatrix. The patient was discharged from the hospital, August 14th, 1878. The resonance of the right side was still impaired, but otherwise much in the same condition as now,* except that she is grown considerably, and is fatter.

Case 4.—Wm. John Smith, æt.8.—On September 27th, 1879, complained of headache and pain in abdomen, next day was delirious, and had severe pain in his side. October 11th, admitted an in-patient to Children's Hospital. There was complete dulness on the left side of the chest posteriorly, and absence of breath sounds; hardly any movement of ribs, and slight bulging of interspaces. The boy was thin and looked worn, lips dusky, and respiration embarrassed. 14th.—No change in physical signs, but the boy looks better, and has taken his food better than he did at home. 21st.—Thoracentesis performed below the angle of the scapula, between 7th and 8th ribs; two to three oz. of pus withdrawn; antiseptic dressings applied. 22nd.—The dressing removed under spray; cavity syringed out with carbolic lotion. 23rd.—Dressed under spray; three or four oz. of pus escaped and lumps of lymph;

* Exhibited at the Midland Medical Society, February, 1880, by Mr. Rhodes.

syringed, and drainage tube withdrawn and reinserted. 26th.—Dressed each day to date; discharge much less. November 22nd.—Purulent discharge has continued in varying quantity up to date. Elastic bandage applied but had to be taken off at 12 p.m. 23rd.—Gauze bandage applied firmly; less discharge; retained about a drachm, perfectly sweet. December 7th.—But little discharge; drainage tube has been discontinued some time. From this time until January 8th, there was no improvement. Strapping the chest had been tried, and the elastic bandage re-applied without any effect. About 1½ in. of 8th rib were removed by Mr. Thomas in the usual manner. The upper border of the rib resected was marked by a carious indentation from pressure of the drainage tube, the intercostal space being obliterated. 13th.—A considerable discharge of pus from pleural cavity. 16th.—Stitches removed. 28th.—Drainage tube left out, but had to be re-inserted on 30th. February 16th.—Drainage tube left off; hardly any discharge, and sinus nearly closed. 18th.—All discharge has ceased. 21st.—Boy to get up. The boy was kept in Hospital until first week in March, when he was sent to convalescent home. The left side of the chest was considerably less than the right; but there was some respiratory movement, and lung expansion had begun to take place.

Case 5.—Albert Ballenger, æt. 3 years and 8 months, admitted into the hospital November 25th, 1879. The child had scarlatina two months ago, a month later had dropsy and inflammation of his chest, had not much cough until the day before admission. On admission there was complete dulness and absence of respiratory murmur posteriorly on the right side. November 26th.—Incision between 8th and 9th rib in line of scapula and 12 oz. pus removed. Child never improved much,

sometimes suffering from sickness. Temperature often above 39° , and considerable discharge from chest. At the end of December abscesses began to form over sacrum and both hips; in January, diarrhœa commenced, and boy wasted rapidly. January 23.—Two and a half inches of 8th rib excised by Mr. Elkington. On the 30th, boy weighed $21\frac{1}{2}$ lbs., the diarrhœa continued, and a week later he only weighed $20\frac{1}{2}$ lbs., but has now increased to 22.4 lbs. Wound in chest closed February 19th; resonance is good and respiratory sounds fair. Diarrhœa still continues and there is slight enlargement of liver, and considerable discharge from the abscess on right hip, the others having closed. The empyema appears quite cured.

Case 6.—Emily Powell, æt. 4, admitted into hospital December 3rd, 1879. Child has been ill four months with cough and pain in abdomen; has been said to be consumptive. On admission complete dulness on left side, absence of breath sounds and movement. Interspaces between ribs slightly distended. December 3rd.—Incision between 6th and 7th ribs in line of scapula, 8oz. pus withdrawn. Temperature rose for the first 10 days to 38° and 39° , then became normal, with one or two exceptions, until January 19th, then rose again and the child began to lose flesh. January 30th.—Two inches rib excised by Mr. Elkington. Opening appeared to close for a few days, about February 25th, but has again opened, and probe shows there is a considerable cavity in which pus still collects. So far there has been no improvement in weight, but the child's appetite and general health have improved. March 11th.—No discharge; breath sounds over greater part of previously affected side; patient looks fat and well.

Case 7.—Charles Taylor, æt. 2 yrs. 8 mos., admitted into

Ward 3, September 25th, 1879.—Child was taken ill six weeks ago; has had a cough and difficulty of breathing. On admission, there was no movement of the right side of the chest, the intercostal spaces were obliterated, and there was slight bulging about the nipples. Dulness on this side was complete anteriorly and posteriorly, except quite at the apex; absence of breath sounds over region of complete dulness, and at apex faint; dulness on left side at the base of the lung; moist râles heard posteriorly, and at the apex; cough constant. Resp., 58; pulse, 140. Sept. 26th.—Incision between 7th and 8th rib, in line of axilla; 24 oz. pus withdrawn. Operation performed antiseptically, and antiseptic dressings continued until October 11th, when discharge had become offensive. Temp., varied, but was always above the normal up to this date; it then began to take a lower range, but continued to rise occasionally to 38° or 39°, usually when pus had by some accident been retained. Oct. 30th.—Boy weighed 21 lbs., having lost rather than gained flesh since his admission. The ribs were close together. Nov. 7th.—One and a half inches of 7th rib excised by Mr. Elkington. Temperature during the first week rose one or two degrees, it has since been normal, with a rise about every fortnight, lasting two or three days, due to collection of pus. The boy's weight has increased to 25½ lbs.; but the cavity is not closed.

Case 8.—James Collins, æt. 6.—Admitted October 13th, 1879.—On admission there was general œdema, constant hard cough, with rapid, embarrassed respiration, and moist râles heard all over the chest. Urine scanty, sp. gr. 1015 ac., alb. ⅙, blood, Temp. 100·4. During the next three weeks the œdema and albumen in the urine gradually disappeared, and the child improved, so that on Nov. 8th he sat up for a short time. The next

day, Nov. 9th, complained of sharp pain in right side, and at night it was found to be completely dull, with entire absence of breath sounds. Nov. 19th.—Hypodermic syringe used, and fluid in chest found to be pus. 21st.—Incision between 8th and 9th rib; 4oz. pus withdrawn. Jan. 17th.—Discharge ceased and opening closed. Feb. 15th.—Pus found to have re-collected; probe passed into sinus; two or three oz. excessively fetid pus set free, and cavity syringed out with carbolic lotion. Feb. 20th.—2½ inches 8th rib excised. The patient improved steadily, and one month after the operation a healing sinus with slight discharge only remains.

The following is a summary of the foregoing cases, eight in number:—Four completely recovered with expansion of the lung, and restoration of the excised rib; the time occupied from the operation to cessation of discharge and healing of wound averaging about six weeks. In all these cases other methods of treatment, as drainage, washing out the pleural cavity, compression by elastic bandages, &c., were fully tried before the operation was resorted to. In two of the cases the patients were so feeble as to cast a doubt on the propriety of the operation, and the others would apparently have succumbed to the chronic hectic symptoms, from which they suffered. Of the four remaining cases, three are completely healed, and the lungs in various stages of expansion; the fourth is doing well.

Case 9.—Jane E. Smith, admitted January 19th, æt. 1 year 6 months. Mother says child was taken ill with a cold two months ago; she has never improved since and has got thin. She had previously been a stout, strong child. The last month she has had a constant cough. She never had any other illness. January 19th.—On admission, child blue and breathing

distressed. There was complete dulness and absence of breath sounds on the right side of chest. The hypodermic syringe when used filled with pus. As the child seemed much oppressed, aspirator used at once, and eight oz. thick greenish pus drawn off. Child seemed easier after it was done, breathed more freely, and colour improved. 20th.—Child seems fairly comfortable, frets, but takes its food well. It had not been weaned on admission; cry weak. 21st.—Dulness increasing again. 22nd.—Three oz. pus drawn off with trocar and long tube, to act as syphon. Chest resonant down to lower border of scapula after it was done. 23rd.—Line of dulness higher than yesterday. 24th.—Incision, 1st, 6th, and 7th rib, into chest. Three oz. of pus and blood removed. Drainage tube inserted. Operation performed antiseptically. 25th.—Dressings changed, loose gauze being soaked with sanious discharge. 26th.—Dressings changed. Dressings soaked with pus. 28th.—Dressings changed; less discharge and of a more serous character; child has diarrhoea and is losing flesh; does not take its food well. 30.—Dressings changed; diarrhoea continues. Feb. 1st.—Dressings changed; diarrhoea continues, and sick at night. 3rd.—Dressings changed; diarrhoea continues, and sick at night. 4th.—Child very weak and low; takes its milk slightly better; no sickness. 5th.—Pulse very feeble, hardly felt; no improvement in diarrhoea. 6th.—Dressings changed; patient very emaciated; left side of thorax does not move at all in respiration, right moves freely and where drainage tube was inserted, ribs can be seen about $\frac{1}{16}$ inch apart and bare from friction of tube. About an inch of each rib bounding the opening was removed—the hæmorrhage was very slight, child was very blue after operation, but seemed in no pain, nor otherwise worse than before.

Breathing seems rather easier ; the child, however, sank gradually about six hours after the operation, which only seemed to afford a little relief to its sufferings. I mention this case in order that all may be included in this paper in which the operation was performed ; but I do not think the operation affected the result in any way. The patient was so weak that perhaps it was unwise to perform any operation, but the success which attended the operation in some of the previous apparently hopeless cases induced me to try it.

The only case I can find recorded in the Journals is the following, which was brought before the Clinical Society of London at the beginning of the present Winter Session. I take the liberty of quoting an abstract of it : the case appears to have terminated fatally, from internal complications :—

A Case of Empyema in which Portions of the Ribs were Excised.—Dr. F. Taylor read for himself and Mr. G. Howse a paper on this case. The patient, a child aged six, was admitted into the Evelina Hospital in January, 1877, with a history of acute pleurisy eleven weeks previously. The left chest was shrunken, and dull on percussion posteriorly, with deficient breath sounds, and some crepitation at the base in front. The temperature was at first nearly normal ; but after a time it fluctuated considerably, often rising in the evening to 103° Fahr. As this continued, and the physical signs were confined to the base of the left chest, this was explored on April 16th, and pus was found. The chest was then incised, and about ten ounces of pus were discharged. Tubes were inserted, and the chest washed out daily. On May 20th, a counter opening had to be made ; but by the end of June very little real progress had been made, as the sinuses rapidly closed, and thus the pus

secreted was retained. On July 2nd, Mr. Howse made a T-shaped incision through the skin round the existing apertures, and, after separating the periosteum, removed with the bone-forceps portions of the seventh, eighth, and ninth ribs. Each portion was about an inch and a half long. The thickened pleura was then cut through from the sinus, and two drainage tubes were inserted. The immediate improvement was decided; but the wound rapidly filled up, and in a short time the sinus was reduced to a channel no larger than it was previously to the operation. The pus continued to be secreted, and its retention was quickly followed by hectic symptoms. Albuminuria was discovered in September, 1877, two months after the operation; anasarca developed later, and there was frequent diarrhœa; so that she sank from the internal complications in October, 1878. At the *post-mortem* examination, the empyema was found to occupy chiefly the posterior part of the chest, reaching from base to apex. The lung was airless, except at the apex. There was no tubercle. The sixth, seventh, and eighth ribs were united by bony bridges. The liver, kidneys, and intestines, were lardaceous, and there was acute peritonitis. The operation performed in this case permitted more falling in of the chest than would otherwise have taken place, but did not facilitate the drainage so much as was desired. This was due to the rapid development of granulations and bone which took place after the operation, the opening being quickly reduced to a narrow sinus. In another case, it would probably be advisable to remove the periosteal tissue much more freely, even if it necessitated also the removal of the thickened pleura. The large opening thus obtained would also allow more complete exploration of the smaller cavities, apparently distinct from the main cavity, such as were found in this case at the time of operation.

REPORTS OF CASES.

BIRMINGHAM AND MIDLAND COUNTIES HOSPITAL FOR WOMEN.

OVARIOTOMY—SECONDARY HÆMORRHAGE FROM THE STUMP—RECOVERY—(*under the care of Dr. Savage.*) Jane Bowden, æt. 39, m., transferred to me by Dr. A. R. Barker, was admitted into the hospital, and I removed a large unilocular cyst of the left ovary on December 30th, 1879. The case was a most simple one in every way, and the operation was a very short one—in fact it was just a typical case for one to choose for one's first ovariectomy. A ligature was applied to a pedicle, which, though not very thick was a little more so than usual for such a tumour, as it was a long one; and length and thickness are usually found together in inverse proportions. I applied what is known as "Tait's Knot;" and I cut away, perhaps, a shade more than I usually do; *i.e.*, I left, if anything, the least bit less on the distal side of the ligature. The matter passed through my mind at the time, but I felt convinced that I had both tied it sufficiently tight and left enough end beyond the silk.

The operation was performed at 10 a.m., and the patient was especially comfortable all day. At 6.30 p.m. she fainted, and became pale and exhausted. I was sent for by Sister Emily, and being unfortunately out at dinner, did not get the message until 9 p.m. I at once started to go to the Hospital, a distance of three miles, and as my friends Messrs. Elkington, Owen, and Eales were with me at the time, they accompanied me. I found the patient at 10 p.m. quite exsanguine and prostrate; her pulse was about 140, and very weak indeed. It was clear that there must be internal hæmorrhage going on, although the wound was quite natural when examined

under the spray ; dulness was almost altogether absent, except on both sides in the iliac fossæ. This much surprised me, as I expected to find dulness up to the umbilicus. She was placed under ether, and 12 hours after the ovariectomy I proceeded to again open the abdomen. I was astounded to see the amount of fluid and clotted blood, which at once burst out through the opened wound ; and I as rapidly as possible made search for the stump which I concluded must be the source of the hæmorrhage. By finding the fundus uteri, I passed my fingers outwards along the broad ligament and soon found it, and beheld a large raw open surface bleeding excessively. The ligature had slipped over the end on its outer or inferior margin (it was the left broad ligament) ; the other section, though slack, was still in situ. I applied another ligature, and the hæmorrhage at once ceased.

I then began to scoop out the blood which had collected. The pelvis was, literally, quite full, and the iliac fossæ too, but it did not seem to have risen much into the upper part of the abdomen, due, of course, to gravity and the position of the patient and of the bleeding point. The operation lasted just one hour, and I made the most complete "*Toilette du Peritoine*" that I ever saw. The poor patient was now, at times, pulseless, but with restoratives she rallied, and after passing very near indeed to the borders of the dark valley, eventually so far convalesced as to walk about the hospital, and to go home to her friends on the 14th February. Though all the blood could not be collected it was very carefully estimated, that, at least, two pints were removed from this patient's abdomen.

MEDICAL NEWS.

REPORTS OF SOCIETIES.

BIRMINGHAM AND MIDLAND COUNTIES BRANCH OF THE BRITISH MEDICAL ASSOCIATION.

Fourth Meeting, January 8th, 1880.

Present: The President, Dr. James Johnston in the chair, and 28 members. The minutes of the previous meeting were read, confirmed, and signed. The following members of the Association were elected members of the Branch:—C. F. Garrett, Walsall; Justin Mc. C. M'Carthy, Wellington; G. H. Hornsby, Bromsgrove; C. W. Suckling, Queen's College; S. A. Welch, West Bromwich.

In reply to the President, Dr. Rickards stated that the report on the calculi shewn at the last meeting would be presented at the following meeting.

Mr. Sampson Gamgee shewed specimens of absorbent cotton wool, and gauze, together with pads and bandages of the same, for the treatment of wounds; he explained their nature, and demonstrated their utility. Mr. Lawson Tait shewed a microscopical specimen of one of two ovaries which he had removed some days before on account of severe dysmenorrhœa, due to exanthematic cirrhosis. The preparation he stated, shewed the new tissue and thickened vessels very well. The patient had recovered without a bad symptom. He also shewed Neuber's new drainage tube of decalcified bone. Dr. Malins shewed the ovaries he had removed a few days before on account of prolapsus of one, with constant pain and continued dysmenorrhœa and failure of health for years past. The patient had not had an untoward symptom since the operation.

Mr. Lawson Tait read a paper on a second series of fifty cases of ovariectomy, and a series of fifty cases of abdominal section for various purposes. The President, Mr. T. F. Chavasse, and Mr. Yates made some remarks, and Mr. Tait replied.

Dr. Warden showed an apparatus for the cure of contraction of the hand and fingers, and explained how he had used it successfully in a case of the kind. Dr. Warden read a paper on congenital talipes equino-varus. After explaining the different degrees of distortion and the causes of their production, he stated that he regarded the displacement with regard to the muscles, as first due to the tibialis anticus; second, to the gastrocnemius and soleus; third, the flexor longus digitorum, and plantar fascia. He advocated early treatment, and insisted upon the fact that much may be done at this stage by properly applied splints and manipulation, he himself preferring lateral splints, at first straight, then curved, until the deformity is converted into simple T. equinus. The tendons of the tibialis anticus and posticus may require dividing at this stage. When eversion is complete, the tendo achillis must be divided as well as the plantar fascia; perhaps also the flexor longus hallucis; and flexor longus digitorum. Scarpa's shoe is subsequently to be applied, and each night and morning the foot should be thoroughly worked and manipulated. He preferred dividing the tendons outwards. Removal of portions of bone was unnecessary in children, but sometimes useful in adults. After some remarks from the President and Mr. West, Dr. Warden replied, and the meeting adjourned.

Fifth Meeting, February 12th, 1880.

Present: The President, Dr. James Johnston in the chair, and 46 members. The minutes of the previous meeting were read, confirmed, and signed. The following member of the Association was elected a member of the Branch: T. Richards, M.B., Bath Row.

Mr. Lawson Tait exhibited the preparation from a case of pregnancy of the right broad ligament, in which he removed a living child at full term by abdominal section. The mother died of exhaustion, the operation having been probably delayed too long; but the child was living and thriving. The operation was performed in exactly

the same way as has been described in Mr. Tait's cases previously published.

Mr. Sampson Gamgee presented a man on whom he had operated for strangulated inguinal hernia. Under an absorbent gauze and cotton-wool pad the wound healed, and the patient left his bed in a week. Mr. Gamgee stated that he had at the same time an equally successful case of rapid healing, similarly treated, in a man aged 75, operated on for strangulated femoral hernia. The sac was opened in both cases.

Dr. A. Bostock Hill read a report on the calculi taken from a pony exhibited by Mr. W. C. Garman at a previous meeting. They were composed of phosphate of calcium, ammonium, and magnesium. The President thanked Dr. Hill for the report.

Mr. H. R. Ker showed a multilocular ovarian tumour, weighing 25lbs., removed by him from a woman, aged 37, a week previously. The operation was performed antiseptically. There were adhesions to the anterior wall of the abdomen only. The pedicle was tied with catgut, and divided by the actual cautery. The wound was dressed with absorbent cotton-wool and gauze, and the dressing removed on the seventh day for the first time. The patient miscarried the day after the operation, being five months advanced in pregnancy. Notwithstanding, her progress had been satisfactory.

Dr. Savage showed part of a cystic tumour of the kidney which he had removed by abdominal section. The patient, aged 47, was married, and had a family. Twelve months before she had noticed a swelling in the abdomen occupying the lumbar and umbilical regions, about the size of a foetal head, free and movable. The diagnosis of cystic kidney was confirmed by the subsequent operation performed by an incision extending two inches above and two below the umbilicus. A wire clamp was placed round as much of the tumour as could be reached after the previous tapping, and cut away on the 23rd day. The patient had done well; a small urinary fistula remaining.

Mr. Priestley Smith shewed a preparation of half an eyeball, mounted in glycerine jelly. The patient from whom it was removed was a gunsmith, who had met with an injury from a piece of percussion cap; violent inflammation, followed in three weeks by sympathetic

inflammation of the sound eye, necessitated its removal. The peculiarity of the case lay in the course taken by the foreign body, which had pierced the ciliary region, perforated the lens, passed across vitreous, penetrated the coats of the eyeball, and became embedded in fibrous tissue in the orbit. The patient made a good recovery.

Mr. T. McIlroy showed two chairs for gynecological and operating purposes, and explained their mechanism, which he stated combined all the recent improvements. The President thanked Mr. McIlroy for the trouble he had taken, and complimented him on the ingenuity and skill displayed in their manufacture.

Mr. J. V. Solomon read a paper on "Ophthalmic Notes of interest to the Family Doctor."

Dr. Carter read a paper entitled "Notes on the Diagnosis and Treatment of Pleurisy in Children." He drew attention to the difficulties attending the diagnosis from the absence of friction and the presence of bronchial or tubular breathing, bronchophony or pectiloquy, hollow or cavernous metallic sounds. For treatment, Dr. Carter insisted on the importance of counter irritation during the decline of the initial fever; to the immediate closure of the wound after paracentesis; and the beneficial effects of excision of portions of rib in certain chronic and irritable cases of empyema,

Sixth Meeting, March 11th, 1880.

Present: Sampson Gamgee, Esq., in the chair, and 49 members.

On the motion of Mr. Williams, seconded by Dr. Sawyer, it was resolved that in the absence of the President, Mr. Gamgee should take the chair.

The minutes of the previous meeting were read, confirmed, and signed. The following members of the Association were elected members of the branch:—Charles Torbitt, Oldbury; Moses Taylor, Cannock; John Hannay, Weobley.

Mr. Lawson Tait showed the ovaries he had removed from a patient. She was single and had been an invalid for seven years, during which period she had been subjected to a variety of treatment and had worn a number of pessaries without relief. Examination under ether revealed a retroverted fundus pressing on two much

enlarged ovaries ; the fundus of the uterus was stitched to the abdominal wall after the ovaries had been removed. The patient had since been free from pain, and had recovered from the operation without any bad symptoms.

On the motion of Mr. Gamgee, seconded by Mr. Palmer, it was resolved "That the nominations for Officers, Council, and Representatives of the Branch in the General Council of the Association be deferred to a Special Meeting of the Branch, to be held at 3 p.m. on Thursday, April 8th. That the Council be instructed to take in the interim such steps as they may deem necessary to ascertain how far the present mode of nomination and election is satisfactory to the general body of members. In the event of any alteration of the present mode of election being deemed necessary, that the meeting of April 8th be specially empowered to receive, consider, and give effect to any recommendation which may be submitted not later than March 30th."

Dr. Hickinbotham read a paper on "Midwifery two hundred years ago."

Dr. Savage read a paper on oophorectomy, in which, after giving a short history of the operation, he discussed its present position with the profession ; a considerable section still regard it as having a very limited field, but this consists of non-operating gynecologists, or those who have not paid special attention to the subject. He thought there was a great field for the operation, and that with proper restrictions it will prove a great boon, especially in cases of ovarian dysmenorrhœa. Four cases bearing on the subject were related, in three the operation was performed for local pain and various reflex neuroses, in one of which the right ovary could not be removed on account of adhesions, although the patient had voluntarily submitted to a second abdominal section. The fourth case was one of absence of the vagina with rudimentary uterus in a girl of 18, and was done with the view of affording relief from a molimen, which was increasing in severity every month. Some remarks were made by Dr. Malins, Dr. Edgington, Mr. Tait, and Dr. Joy. The meeting then adjourned.

MIDLAND MEDICAL SOCIETY.

The first ordinary meeting after the Christmas recess was held 28th January.

Dr. Malins showed a specimen of retro-uterine hæmatocele with right fallopian pregnancy. The hæmatocele was very large, readily admitting the hand. Dr. Malins also showed (for Dr. Jackson) a pregnant uterus with extensive epithelioma of the cervix. Death had occurred from exhaustion, produced by repeated hæmorrhages. *Post-mortem*.—A mass of epithelioma, about 4in. by 3in., was found growing from the posterior lip, and Dr. Malins was of opinion that it might have been removed during life with fair prospect of success had it been diagnosed.

Mr. C. Bradford showed the placenta from a case of abortion induced, Mr. Bradford believed, by extraction of teeth.

Mr. Joseph Hunt showed a penis which he had amputated for scirrhus. The growth occupied nearly the whole glans, and compressed the urethra.

Dr. Sawyer read a paper, entitled "Therapeutic Notes," in which he treated very ably and fully chronic hoarseness, habitual constipation and headaches. Of the latter he described eleven varieties, and detailed the treatment appropriate to each.

Meeting, 11th February.

Eight new members were elected and 19 nominated for membership.

Dr. Savage showed the fœtal bones from a case of "Missed Abortion." The patient, being pregnant about four months, labour pains came on but no fœtus was expelled. Months afterwards she passed small portions of bone, and two years after the spurious labour, her general health having suffered much from pain and fœtid discharges, Dr. Savage dilated the os with laminaria, and removed the remaining bones of a four months' fœtus.

Mr. Gamgee showed a patient on whom he had operated for strangulated hernia ten days before. The wound was perfectly healed. Mr. Gamgee brought the case to illustrate the advantage of dry and infrequent

dressing, and showed specimens of pads of absorbent cotton-wool, lightly covered with gauze.

In the discussion, Dr. Hickinbotham stated that at Mr. Gamgee's suggestion he had used the pads, in lieu of napkins, in obstetric cases, and had found them answer admirably.

Mr. Garner showed a heart which, in addition to extensive valvular disease, had a small aneurism at the junction of the aorta with the left ventricle.

Mr. Bartleet read a paper on "Nerve Stretching." He related three cases. In the first (successful) he stretched the ulnar nerve, but as he at the same time removed a neuroma he could not claim it as a pure case of nerve stretching. In the second, the cords of the brachial plexus were stretched, but without relief. In the third, the great sciatic nerve was stretched with complete relief to an intractable sciatica.

Dr. Carter read a "Memorandum on Unusual Sequelæ of Typhoid Fever," viz., periostitis, phlebitis, and paralysis, of which he related cases.

Meeting, 25th February.

Mr. Priestley Smith shewed five beautifully mounted specimens of eyes which he had excised for staphyloma of the cornea.

Mr. W. H. Osborne showed a heart with aortic valves calcified to a remarkable degree.

Dr. Wood-White showed a living case, a child, æt. seven months, with coloboma of the iris and a dermoid tumour of the cornea and sclerotic. An example of two somewhat rare congenital defects united in the same individual, and as far as Dr. White knew hitherto unrecorded.

Mr. Gamgee showed specimens of carbolized and benzoated pads and bandages as prepared at his suggestion by Messrs. Southall.

Mr. J. H. Palmer showed Dr. Greenhalgh's air pad pessary.

Mr. Lawson Tait read a paper on "Gangrene of Ovarian Tumours by Axial Rotation." He gave an exhaustive list of the recorded cases, and described in detail four which had occurred in his own practice. In all, the tumours were of the right ovary, and the rotation

was to the right. In the last three cases he successfully removed the tumours by ovariectomy.

Meeting, 10th March.

Mr. Berry sent a large uterine polypus, which had been removed by the wire cecaseur. Removal occupied half an hour, and the tumour had to be delivered by forceps. Six weeks afterwards the stump was dwindling away, and the uterus had resumed its normal size.

Dr. Hickinbotham read a paper on the "Treatment of Endo-metritis," in which he condemned the indiscriminate use of astringents and caustics. He preferred the application, by means of a Playfair's probe, of sedatives, as belladonna and morphia.

Mr. H. L. Browne read a paper describing four cases, in which he had operated for strangulated umbilical hernia. In one of the cases, the intestine, after passing through the umbilical opening, had turned back again into the abdomen through a second opening in the abdominal wall, and this second aperture was the seat of the strangulation.

THE INDEX MEDICUS.—This important publication is compiled under the direction of Dr. Billings, of the United States Army, whose well known catalogue of the Library of the Army Medical Department at Washington, is a most valuable medical bibliographical record. It provides us, month by month with a complete and systematically arranged index of the contributions to medical literature from all parts of the world. No library, either public or private, can afford to be without it, while those who have only a limited stock of books and access to few periodicals, may, by its means, have a catalogue which will enable them to collect all that has been written on any subject, with little labour and but trifling expense. As the Index Medicus is a private venture, it must stop if unsupported; so we hope all who have ever known what it is to hunt out the literature of a subject, will show their appreciation of this attempt to make such labour easy for the future, by becoming subscribers to the Index Medicus, which may be obtained through any bookseller.

MEDICINE AND PATHOLOGY.

Dr. Du Castel, sums up his investigation on hypertrophy and dilatation of the cardiac ventricle as follows:—The weight of the heart varies physiologically within wide limits; it increases with age, but the relation between the two ventricles is nearly always constant, the left weighing about two and a half times as much as the right. The capacity of the right ventricle is in adult life greater than that of the left, but with increasing age this difference disappears. Under pathological conditions the normal relations of the two ventricles are destroyed, and according to the cause in operation, one or other is alone affected. The left ventricle is more often hypertrophied, and this obtains in aortic obstruction and dilatation, and mitral insufficiency in atheroma of the aorta, and most markedly in interstitial nephritis. The right ventricle hypertrophies usually as a consequence of a similar condition in the left ventricle, probably from hypertrophy of the commissural fibres, but may arise independently of such condition, as in mitral stenosis, and chronic pulmonary affections. Dilatation of the left ventricle is marked in old age, in aortic or mitral regurgitation, and atheromatous disease. Atrophy and diminution of capacity seem possible in marked cachexia, where the progress of the disease is slow. Dilatation and hypertrophy may proceed *pari passu*, but this relationship is not constant. Hypertrophy of the ventricle may sometimes be considerable, without dilatation of the cavities, even indeed with a diminution of them, constituting concentric hypertrophy. In such a case the muscoli papillares are hypertrophied.—Archiv. Gén. de Méd.

ALTERATIONS IN NERVES OF SKIN IN CASES OF ICTHYOSIS, AND VITILIGO OF THREE YEARS' STANDING.—MM. Leloir and Chabner found in each case all the evidences of a slow degenerative process. In some nerve tubes the axis cylinders had completely disappeared, the myelin was collected in drops, and had at some points disappeared. The majority of the nerve tubes had undergone complete degeneration. The myelin had completely disappeared. The empty sheaths presenting a beaded aspect.—*Ibid.*

DIABETIC COMA.—At a meeting of the Société de Médecine of Strasbourg, Dr. Kien read a paper on a case of diabetes terminating fatally with dyspnœa and coma, accompanied by elimination of acetone. In the discussion that followed, most of the speakers declined to accept the view that death resulted from acetone poisoning, as acetone was often eliminated by diabetics, without any apparent interference with health. *Gazette Méd. de Strasbourg*, 1880, No. 2.

THE HEALING OF WOUNDS.—Dr. H. Tillmanns asserts that pieces of liver or kidney hardened in alcohol, when introduced into the peritoneal cavity, have breaches in their surfaces healed by wandering of cells from the blood vessels. He concludes that the connective tissue corpuscles are not necessary to the healing process. In wounds of living liver and kidney he admits proliferation of the connective tissue corpuscles and epithelium, but thinks the part played is comparatively unimportant. — *Virchow's Archiv.* Bd. lxxviii., Heft 3.

THE DIAGNOSIS OF CHRONIC PERITONITIS.—M. Peter indicates the use he has made of the surface temperature of the abdomen as a means of differential diagnosis in cases of abdominal enlargement. He finds the temperature in the median line below the umbilicus to average 92.3, and asserts that while this is not exceeded in ascites or tympanitis, there is always an increase of at least one degree in chronic peritonitis. — *Archiv. Gén. de Méd.*

THE PATHOLOGY OF ACUTE CENTRAL MYELITIS.—At a meeting of the New York Neurological Society (Nov. 3rd, 1879), Dr. E. C. Sequin reported a case of acute central myelitis, in which *post-mortem* examination showed that the lower dorsal region of the cord was the seat of marked swelling and evident softening. The cord was carefully hardened, first in absolute alcohol, and then in bichromate of potassa; and, when examined microscopically, presented the following lesions: Descending degeneration of the posterior lateral columns; ascending degeneration; nearly complete destruction of the anatomical elements at the seat of the greatest softening. Several ganglion-cells contained vacuoles; vacuoles apparently quite globular, and contents unaffected by reagents. The coats of the blood-vessels were thickened. Granular bodies—whether the granulation corpuscle or not, was undecided. Neuroglia thickened. Acute central softening.—*New York Medical Record.*

THE SEQUENCE AND DURATION OF THE CARDIAC MOVEMENTS.—Dr. Gibson has made observations on the case of presternal fissure described by him in the previous number, and has ascertained the duration of each phase of the cardiac movements, the average being—auricular systole, '112 sec., ventricular systole, '368 sec., diastole '578 sec., entire cycle, 1'057 sec. Compared with the measurements of Donders the interval between the first and second sounds is somewhat longer.—*Journal of Anatomy and Physiology*, Vol. xiv.

ON THE DEVELOPMENT OF FIBROUS TISSUE FROM THE HEPATIC PARENCHYMA IN CIRRHOSIS OF THE LIVER.—Dr. Hamilton shews that the hepatic parenchyma undergoes proliferation, and the resulting nuclei elongate and form spindle cells and connective tissue. He adopts the view of Schenk that the hepatic epithelium is derived from the meso-blast.—*Ibid.*

ALTERATIONS OF THE SUPRA-RENAL CAPSULES.—M. Bochefontaine communicated to the Société de Biologie the results of his researches upon the alterations of the supra-renal capsules. Out of more than a hundred lunatics over forty years of age, and for the most part general paralytics, the medullary substance of the supra-renal capsules in the majority of cases was in a state of greyish, more or less liquid, pulp, interspersed with whitish detritus. At the Hôtel Dieu the autopsies gave the same result for individuals who had passed the fortieth year. In younger subjects the capsules were ordinarily healthy. More than twenty years ago M. Vulpian drew attention to a red material in the medullary substance, brought into view by a watery solution of iodine. This substance exists in the softened medullary matter as in the healthy, but is less abundant in man than in animals, especially the dog. It is not destroyed by hæmorrhage into the capsule. In a convict examined six hours after decapitation the red colour was not better marked than in the subjects examined twenty-four hours after death. Typhoid fever, cancer, pneumonia, hepatic cirrhosis, cardiac disease and pyæmia seemed in no way to influence the capsules, but in a case of parenchymatous nephritis the red colour could not be developed. Tuberculosis, or the absence of a kidney, had no influence on the chromogenous material.

ON THE PROCESS OF HEALING.—Dr. Hamilton maintains that there is only one process of healing; he denies the organisable power of fibrin as well as of leucocytes derived from the blood vessels. When a breach of continuity occurs, the lymph thrown out serves a temporary purpose by protecting the surface, but entirely disappears. If the surface is not supported by equable pressure, the connective tissue protrudes, carrying with it capillaries thrown into loops, and forms granulation tissue—the immigrant cells with which this is crowded form pus; growth takes place from proliferation of the formative elements of the connective tissue (connective tissue corpuscles.) Healing depends upon the contraction of the deeper layers of the connective tissue whereby the excessive blood supply is cut off. Catgut ligatures are probably dissolved by the action of the tissue alkali (potassic phosphate.) Vessels are occluded by growth from the intima.—*Journal of Anatomy and Physiology*. Vol. xiii.

THE SPHYGMOGRAPHIC INDICATIONS OF ANEURISM.—Dr. A. T. Keyt publishes an able paper, supported by sphygmographic tracings on this subject; he concludes that:—(1) *Deformation* of the pulse beyond a suspected aneurism is of little, if any, value as indicating the presence of aneurism, but indicates rather the presence of arterial obstruction which may originate from other conditions, as well as from aneurism. Absence of such deformation is no evidence of absence of aneurism. (2) *Delay* of the pulse beyond a suspected aneurism is strong evidence of the presence of aneurism; and when arterial obstruction and vaso-motor paralysis can be eliminated, the sign is conclusive of aneurism. Absence of such delay is of no value as indicating the absence of aneurism. (3) In aneurism, already diagnosed deformation of the distal pulse indicates the presence of concomitant arterial obstruction. (4) In aneurism, already diagnosed delay of the free distal pulse indicates one with free communications, large cavity, and yielding walls; while absence of pulse-delay indicates one with narrow orifice, or small cavity, or resisting walls.—*New York Medical Record*.

THERAPEUTICS.

A NEW REMEDY IN DIABETES.—Dr. J. Y. Dale, of Lemont, Pa., writes to the Boston Medical and Surgical Journal to recommend nitrate of uranium, in doses of one or two grains, three times a day. He says that a year ago he treated a case in which this was the only medicine prescribed, and in connection with appropriate diet, the quantity of urine was reduced from two and a half gallons per diem to a quart in less than a month, with a corresponding improvement in all the other symptoms.

HYOSCYAMUS IN BRAIN AFFECTIONS.—Dr. Gray has found much benefit from the use of this drug in acute mania and melancholia with frenzy; in simple restlessness from cerebral irritability, and in hysteria and chorea. The dose used varied from one sixteenth of a grain to a grain, and the forms used were both the crystallised and the crude form; the former being used in smaller doses. —Boston Medical and Surgical Journal. Vol. cii. No. 9.

THE TREATMENT OF CANCER.—Professor John Clay, of Birmingham, draws attention to a new method of treating cancer of the female generative organs. The new remedy is Chian turpentine given internally, in doses of two or three grains, three or four times a day. Mr. Clay recommends that an ethereal solution should be made, by dissolving one ounce of the turpentine in two ounces of pure sulphuric ether, and that a mixture should be prepared according to the following formula:—Solution of Chian turpentine, half an ounce; solution of tragacanth, four ounces; syrup, one ounce; flowers of sulphur, forty grains; water to sixteen ounces; one ounce three times daily. The maximum dose which can be safely given is 25 grains daily. The turpentine appears to act by destroying the vitality of the growth. It is a most efficient anodyne, causing entire cessation of pain in a few days. Mr. Clay says "in the early stages of cancer, it may be affirmed that an undoubted cure may take place speedily, and experience justifies the expectation that under such circumstances a recurrence of the disease will not follow."—Lancet, March 27th, 1880.

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New Books, &c., Received.

Pulmonary Hemorrhage. By RICHARD E. THOMPSON. London : Smith, Elder and Co., 1879.—2. The Spectroscope in Medicine. By C. A. MAC MUNN, B.A., M.A. London : J. and A. Churchill.—3. The Student's Primer on the Urine. By J. TRAVIS WHITTAKER, M.D. London : J. and A. Churchill.—4. Pseudo-Hypertrophic Muscular Paralysis. A Clinical Lecture. By W. R. GOWERS, M.D., F.R.C.P.—5. Proceedings of the North-Western Association of Medical Officers of Health for the year ending February, 1879.—6. On Absorbent and Antiseptic Surgical Dressings. By SAMUEL GAMGEE, F.R.S.E.—7. A History of Syphilis. By J. L. MITCHELL.—8. The Report of the Health of Aston Manor. By HENRY MAY, L.R.C.P.—9. Skin Diseases. By MALCOLM MORRIS. Smith, Elder and Co., 1879.—10. Report of the Health of the City of Worcester. By W. Strange, M.D.—11. The Patellar Tendon Reflex. By Hyrom Bramwell, M.D.—12. Spinal Sclerosis by Shingleton. Smith, M.D.

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British Medical Journal,
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